COMMUNICATIONS SERVICES FOR TEXT EDITORS

INPUT

ABOUT INPUT

THE COMPANY

INPUT provides planning information, analysis, and recommendations to managers and executives in the information processing industries. Through market research, technology forecasting, and competitive analysis, INPUT supports client management in making informed decisions. Continuing services are provided to users and vendors of computers, communications, and office products and services.

The company carries out continuous and in-depth research. Working closely with clients on important iss
members analyze and
data, then develop
innovative ideas to
Clients receive
access to data on wi
and continuous consu

Many of INPUT's pro
have nearly 20 ye
areas of specializa
senior management
marketing, or plai
enables INPUT to s
to complex business

Formed in 1974,
leading internatic
Clients include o
largest and most
companies.

UNITED STATES, West Coast
2471 East Bayshore Road
Suite 600
Palo Alto, California 94303
(415) 493-1600
Telex 171407

UNITED STATES, East Coast
Park 80 Plaza West-1
Saddle Brook, New Jersey 07662
(201) 368-9471

UNITED KINGDOM
INPUT Europe
Empire House
414 Chiswick High Road

vice Company, Ltd.
No. 12-7 Kita Aoyama
{u

-9 Merriwa Street
don N.S.W. 2072

Y-CNT
TET
CUSTOM
AUTHOR
Communications Services for Text Editors
TITLE

000023

MARKET STUDY OF COMMUNICATIONS SERVICES FOR TEXT EDITORS IN CANADA

Prepared For
CNCP TELECOMMUNICATIONS

JULY 1979

INPUT

Digitized by the Internet Archive
in 2015

https://archive.org/details/communicationsseunse

COMMUNICATIONS SERVICES FOR TEXT EDITORS

TABLE OF CONTENTS

Page

I INTRODUCTION 1
- A. Purpose 1
- B. Research And Methodology 2

II EXECUTIVE SUMMARY 5
- A. Key Conclusions 5
- B. Conclusions 6
  - 1. The Market For Communications Services For Text Editors 6
  - 2. The Use Of Text Editors In Canada 8
  - 3. Users Business Communications Needs 9
  - 4. Users Reaction To Teletex 10
- C. Recommendations 11

III USER SUMMARY 15
- A. Mail 15
  - 1. Destination Of Messages Sent By Mail 15
  - 2. Applications Of Mail 18
  - 3. Methods Of Handling Mail 22
- B. Text Editors 27
  - 1. Text Editors - 1979 27
  - 2. Text Editors - 1983 29
  - 3. Applications Of Text Editors 31
  - 4. Reasons For Not Using Text Editors 31
  - 5. Number Of Text Editors Installed 34
  - 6. Communicating Text Editors - 1979 39
  - 7. Communicating Text Editors - 1983 39
- C. Message Telecommunications 42
  - 1. Telex 42
  - 2. Facsimile 44
  - 3. Message Telecommunications Applications 44
  - 4. Improvements Desired In Message Telecommunications Services 44
  - 5. Changes Users Expect To Be Making In Their Message Telecommunications Systems 48

Page

D. Key Documents 50
  1. Types Of Key Documents 50
  2. Methods Of Transmitting Key Documents 53
  3. Urgency Of Key Documents 56
  4. Key Documents Which Could Be Transmitted Via Electronics 59
E. Teletex 61
  1. Potential Users 61
  2. Teletex Use 61
  3. Teletex Applications 66
  4. Teletex Product Features 66
  5. Value Of Teletex Product Features 78

IV VENDOR SURVEY 79
A. Text Editor Market Estimates 79
B. Communicating Text Editor Applications 80
C. Text Editing Alternatives 81
D. Text Editor Marketing 82

V A MODEL OF THE CANADIAN BUSINESS COMMUNICATIONS MARKET 83
A. Purpose 83
B. Methodology 84
C. Analysis Of The Model 94
  1. Comparison With Source Data 94
  2. Analysis Of Functional Grouping 97
  3. Growth Forecasting 100

APPENDIX A: SOURCES USED 105

APPENDIX B: INTERVIEW PROGRAM 107

APPENDIX C: DEFINITIONS 109

APPENDIX D: QUESTIONNAIRES 113
User On-Site 113
User Telephone 130
Vendor 138

COMMUNICATIONS SERVICES FOR TEXT EDITORS

LIST OF EXHIBITS

			Page
III	-1	Destination Of Mail From Headquarters Establishments	16
	-2	Destination Of Mail From Independent Establishments	17
	-3	Applications Of Mail	20
	-4	Problems With Canada Post	23
	-5	Companies Using Couriers For Some Portion Of Their Mail	25
	-6	Proportion Of Mail Traffic Handled By Courier	26
	-7	Companies Using Text Editors - 1979	28
	-8	Companies Expecting To Use Text Editors - 1983	30
	-9	Applications Of Text Editors	32
	-10	Reasons For Not Using Text Editors	33
	-11	Number Of Text Editors Installed - Total	35
	-12	Number Of Text Editors Installed - Headquarters	37
	-13	Number Of Text Editors Installed - Independents	38
	-14	Percentage Of Companies Who Have Text Editors And Are Using Them To Communicate - 1979	40
	-15	Percentage Of Companies Who Are Using Text Editors Now And Expect To Use Communicating Text Editors By 1983	41
	-16	Companies Using Telex	43
	-17	Companies Using Facsimile	45
	-18	Applications Of Message Telecommunications Services	46
	-19	Improvements Desired By Users Of Message Telecommunications Services	47
	-20	Changes Users Expect To Be Making In Their Companies' Message Telecommunications Systems	49
	-21	Types Of Key Documents As Defined By Respondents	51
	-22	Summary Of Key Document Applications	52
	-23	Comparison Of Key Document Applications With Applications Of Existing Modes Of Message Handling	54
	-24	Methods Of Transmitting Key Documents - Headquarters	55
	-25	Methods Of Transmitting Key Documents - Independents	57
	-26	Delivery Urgency Of Key Documents	58
	-27	Companies Which Believe That They Could Send At Least Some Key Documents Via Electronic Means	60
	-28	Companies Which Believe That Teletex Could Be Beneficial To Them	62
	-29	Reasons For Using Teletex	63
	-30	Reasons For Not Using Teletex	65
	-31	Respondents' Anticipated Uses Of Teletex - By Application	67

-32 Comparison Of Users' Anticipated Uses Of Teletex With Application Of Existing Message Handling Modes And Document Types — Page 68
-33 Importance Weight Of Teletex Product Features - Headquarters 70
-34 Importance Weight Of Teletex Product Features - Independents 71
-35 Importance Weight Of Teletex Product Features - Comparison Of Headquarters And Independents 72
-36 Importance Ranking Of Teletex Product Features - Headquarters 73
-37 Importance Ranking Of Teletex Product Features - Independents 74
-38 Most Important Teletex Product Features 75
-39 Respondents Willingness To Pay More For Their Most Important Feature - Average Percentage Premium 76

V -1 Key Components Of Business Communication - Types Of Equipment And Messages 85
-2 Business Communications Components - U.S., 1978 - Types Of Equipment And Messages 86
-3 Business Communications Generating Equipment - U.S. - Units Installed, 1978 87
-4 Business Communications Volume - U.S. - Millions Of Messages Annually, 1978 88
-5 Business Communications Generating Equipment - U.S. Units Installed Per 1,000 Employees, 1978 89
-6 Business Communications Volume - U.S. - Messages Sent Annually Per Employee, 1978 90
-7 Business Communications Generating Equipment - Canada - (Based On INPUT Model) Units Installed, 1978 91
-8 Business Communications Volume - Canada - (Based On INPUT Model) Millions Of Messages Annually, 1978 92
-9 Business Communications Components - Canada, 1978 (Based On INPUT Model) Types Of Equipment And Messages 93
-10 Model Of Canadian Business Communications, 1978 - Based On U.S. Equipment And Volume Per Employee 95
-11 Canada/United States Ratios (Canada As A Percent Of United States) 96
-12 Business Communications Categories 98
-13 Business Communications Categories - Expressed As A Percent Of U.S. 99
-14 Growth Of Business Communications Components - U.S., 1978 To 1983 101
-15 Comparison Of U.S. And Canadian Growth Rates, 1978 To 1983 - Average Annual Growth Rate 102
-16 Model Of Canadian Business Communications, 1978 To 1983 - Based On INPUT Model With Adjustments 104

I INTRODUCTION

I INTRODUCTION

A. PURPOSE

- It is the intent of this study to examine and define the market for communications services for text editors in Canada. To this end three, more specific, objectives were placed on the effort.

  - To define and quantify the market for text editors and communicating text editors in Canada now and in 1983.

  - To define the use of these text editors for the communication of text and the use of alternative methods including mail, courier, Telex, facsimile, etc., to perform these same functions.

  - To examine the applicability of the Teletex concept to text editor based communications and to examine the product features and basic salability of such a Teletex service.

- It was further required that these markets would be examined by the following eight major industry sectors.

  - Discrete Manufacturing.

  - Process Manufacturing.

  - Transportation.

  - Banking and Finance.

  - Insurance.

  - Wholesaling.

  - Retailing.

  - Business Services.

- Headquarters establishments of major corporations and smaller independent companies (less than 500 employees) were to be examined. Branches of major firms were not interviewed.

- The interviews were to be conducted to give a representative geographic sample of the Canadian business community.

- The study was to be based on new field research performed in Canada.

B. RESEARCH AND METHODOLOGY

- A total of 320 user interviews and 12 vendor interviews was conducted. The interview program is shown in Appendix B. The questionnaires are shown in Appendix D.

- Sixty-four user interviews were conducted on-site by INPUT professionals familiar with the message communications market and technology. These interviews were completed and reviewed with CNCP Telecommunications prior to the start of the telephone interviews. Most of the on-site interviews were conducted with headquarters establishments of major firms in Canada.

- The geographic distribution of the on-site interviews is as follows:

-	Toronto	30
-	Montreal	21
-	Vancouver	8
-	Calgary	3
-	Edmonton	2
	Total	64

- The geographic distribution of the telephone interviews was randomly applied across all of the Canadian business community.

- Emphasis during the interviews was to obtain as much understanding as possible of users' viewpoints on the issues involved. Hence as many questions as possible were left open to user wording and expansion.

- Approximately one-sixth of the interviews were with communications managers (one-half of the on-site interviews). The other individuals were controllers (75), office managers (71), Presidents/General Managers (39), DP Managers (18) and an assortment of managers, operations managers, etc.

- Vendor interviews were conducted with most of the suppliers of text editing equipment operating in Canada plus other major suppliers of computer based text editing services.

- A theoretical model of the Canadian Business Communications Market was developed using the structure of the U.S. market as a framework. This model was then modified to fit the Canadian market. This model serves as a second approach to the analysis. Its major function is to show the long range implications of text editing typewriters upon communications services in Canada.

II EXECUTIVE SUMMARY

II EXECUTIVE SUMMARY

A. KEY CONCLUSIONS

- The number of communicating text editing typewritters in Canada will increase communicating from 1,000 units in 1978, to 10,000 units in 1983, and to 30,000 units in 1988.
    - In the near future a communication service should not be based solely upon communicating text editors.
- The primary segment of the Canadian business communications market which should be addressed with a new communications service is mail.
    - A reliable overnight store and forward service would address this market.
- Teletex is a viable offering. However, it must:
    - Be able to access all key user-premises equipment including computers, data terminals, communicating text editors.
    - Have available high performance user premises terminals.

B. CONCLUSIONS

1. THE MARKET FOR COMMUNICATIONS SERVICES FOR TEXT EDITORS

- At this point in time (June 1979), in Canada, the use of text editors to communicate is minimal.

- There are less than 1,000 communicating text editors in use and their use is either experimental, very limited, or very specialized for applications such as transmitting text to a typesetting system or collecting address lists from a computerized data base.

- While both users and text editor vendors express great expectations of future growth of both text editors and communications on text editors, the user experience to date (some communicating text editor users have discontinued their use), the operational problems (manual call coordination primarily), and the growing availability of alternatives (Fax, computer based message systems, Viewdata, etc.) tend to make these expectations look very optimistic.

- On the other hand, the growth of communicating text editors in the United States has been quite strong in spite of, or possibly because of, forecasts which orginally seemed optimistic. It is expected that the Canadian market will behave in a similar manner.

- Communicating text editors represent a market which is primarily pushed by vendor marketing efforts as opposed to being pulled by user requirements. In Canada the vendors of communicating text editors are not yet pushing this product because:

    - Both the vendors of text editors and their users are new to the marketing and use of text editors themselves and thus have their hands full developing this more basic market. They are very successful in these efforts.

  - Most of the vendors of text editors have only a limited number of sales and service locations in Canada at present. While they are in the process of expanding their geographic coverage, it will not be until they have a major fraction of Canadian business geography covered that they will be able to develop the inherently multi-location communicating text editor market.

- Assuming that the Canadian market for communicating text editors will follow that of the U.S., as it has been following it closely in text editors, then the next stage of applications for communicating text editors, after the computer connections, will be those involving the transmission of voluminous and/or complex reports. The shorter message length correspondence and intra-company applications will follow these longer message applications by at least a year.

- The Banking and Finance industry in Canada is showing the greatest interest in communicating text editors. While their present applications are just starting and are experimental, it is the Banking industry, with their large number of branches and extensive requirements for internal financial reports, which is the most likely industry to start applying communicating text editors. This is true to some extent in the United States, but the Canadian Banking industry is much more geographically distributed than it's U.S. counterpart.

- The estimated base of installed communicating text editors in Canada is as follows:

  - 1978- 1,000 units
  - 1983- 10,000 units
  - 1988- 30,000 units

  - A note of caution is appropriate when using these unit forecasts to establish a forecast for communications services. These figures represent keyboards or workstations which originate or receive text editor messages via telecommunications. To the extent that these workstations are part of a clustered, multistation text editing system or are connected to an in-house message switcher, the number of external communication lines required to connect these units is reduced. However, since most of these units will be in single workstations locations, the reducing effect, even in 1988, will be minimal - perhaps 20%.

- In terms of message volumes on communicating text editors there was no data available for Canada either from the survey or from other sources. Using data obtained from other studies in the U.S., we have estimated the message volume per unit at 250 pages per year. In the early years of communicating text editors this message volume is represented by a weekly transmission of five pages. As more units are added for correspondence applications, the number of transmissions will go up to one per day, but the message length will decline to one page or less, keeping the total at about the same 250 pages per year. While this is admittedly a conservative forecast, we believe it to be a realistic one.

2. THE USE OF TEXT EDITORS IN CANADA

- Text editors are in an early stage of market development in Canada.

  - While approximately half (49%) of the headquarters establishments interviewed in this survey use text editors the applications are largely limited to typing pools and specialized applications such as form letters and long reports.

  - Although there were five establishments with more than ten text editors installed, the average number of units per establishment, for those establishments which had text editors at all, was less than four.

- In the INPUT model of business communications in Canada it was estimated that the installed base of text editors was 23,000 as of the end of 1978. This number was confirmed by discussions with text editor vendors.

- Based on the user survey the installed base of text editors is estimated at 21,000 to 27,000 units.

- The estimated installed base in the eight industry sectors studied is approximately 15,000 units.

- The forecast of text editors installed in Canada is as follows:

  - 1978- 23,000 units
  - 1983- 60,000 units
  - 1988- 125,000 units

3. USERS BUSINESS COMMUNICATION NEEDS

- The clearest and most important unmet need in users' business communications in Canada is the ability to move key documents on a reliable next day delivery basis.

  - Canada Post is not able to perform reliably on this schedule.

  - Couriers are filling this gap but at an increasing level of dissatisfaction on the part of users.

  - Electronic transmission is often used but, this kind of delivery speed is not required by users.

- Facsimile equipment and, more recently, facsimile services are being applied to this user need and appear to be growing rapidly, especially in the Banking industry.

- Data communications, data terminals and computer compatibility are a growing concern of users both with respect to their existing message networks as well as in their consideration of future networks such as Teletex.

4. USERS REACTION TO TELETEX

- Almost half of the respondents stated that Teletex would be or might be useful to their companies.

- Although potential users of Teletex gave a broad range of possible uses, communication between text editors was a minor fraction of such uses.

- Teletex is viewed primarily as an international message service by independent companies.

- Teletex is viewed by headquarters establishments primarily as a means of consolidating and cost reducing a number of their other message telecommunications services.

- The Teletex product features which are viewed as most important by headquarters establishments are those relating to computer compatibility.

- In independent companies, the most important Teletex features are those which allow Teletex to operate as a message telecommunications service, somewhat like Telex.

- Teletex features which enable the service to perform some of the functions normally associated with text editors such as message composition and editing, and prestored message texts, were not rated as very important by potential users.

- Terminals provided with the service is the third most important feature for headquarters companies, and is the most important feature for independent companies.

- As another demonstration of the diversity of users' interest in Teletex, every single feature proposed for Teletex was rated by at least some users as the most important feature for their use.

- Users did not see Teletex being used for inbound transactions such as orders, claims, etc. The existing message telecommunications services are used for these applications. This leads to the conclusion that users do not see large numbers of other users (their customers and suppliers) becoming subscribers to the service, in spite of the Telex interface.

C. RECOMMENDATIONS

- The primary segment of the Canadian business communications market which should be addressed is replacement of mail for the following reasons:

    - Reliable, next day delivery is an important requirement for business users.

    - Many of the existing means of meeting this user requirement are either overkill (e.g. facsimile) or are themselves declining in reliability (e.g. couriers).

    - Much of this traffic could be handled by electronic transmission media.

    - Users today are in a highly susceptible marketing posture. They are aware of and enthusiastically awaiting great things from electronic communications but are uneducated in it's practical application.

    - Mail is the second largest sector in the business communications market with about 2.5 billion first class letters and courier messages per year; and, in spite of its current level of performance, is growing at an aggregate rate of 6% annually.

- In order to pursue this market, a message telecommunications service with the following capabilities would be required:

  - Overnight, store and forward delivery.

  - Access to the existing domestic and international message telecommunications networks for message acceptance and delivery.

  - Access to a number of different user premises equipment including:

    - Computers.

    - Data terminals.

    - Communicating text editors.

  - High performance message terminals which can assist the operator through automation, and which can produce high quality output at a high speed, are an integral but not required part of the service.

- Teletex could very well be such a service.

- Some additional features of the service which could greatly enhance its marketability are as follows:

  - Some means of achieving household delivery including proof of delivery.

  - Message storage, security, and registration, along with a legislative campaign to allow transmitted messages to be regarded as legal documents.

- Also required with this service would be a market development program aimed at educating the user to the concept. Included in this market development could be the following:

  - Joint market development activities with a vendor of text editing equipment.

  - Experimental service installations with leading edge users.

  - Equipment development incentive contracts for equipment such as user premises message switchers and other interfaces to the service.

- Communications services oriented solely to communications between text editors is not a usefully addressable segment because of the following reasons:

  - The size of the market now, as well as in 1983, and most probably even in 1988, is smaller than Telex in terms of units of equipment installed and is much smaller than Telex in terms of message volumes.

  - The kinds of features and interfaces which would be required to provide a communication service for text editors are not significantly less than those required to address the mail market.

  - The extent of market development, including user education, is also similar, except that in the case of communication text editors the appropriate applications would have to found and then placed on this new media. In the case of mail replacement the appropriate applications are clear. Only the transmission media would change.

- The "paper producing" industries, banking, insurance, and business services are the appropriate industry sectors in which to begin, more specifically the headquarters of those companies.

- Consideration should be given toward providing terminals with the service. The specifications of these terminals should be investigated.

III USER SURVEY

III USER SURVEY

A. MAIL

I. DESTINATION OF MESSAGES SENT BY MAIL

- Messages sent from an establishment can be intended for other locations within the same company, for other companies (which are suppliers or customers of the sender), or for households. Each of these destinations and the types of messages sent to them have different requirements of importance for communications services.

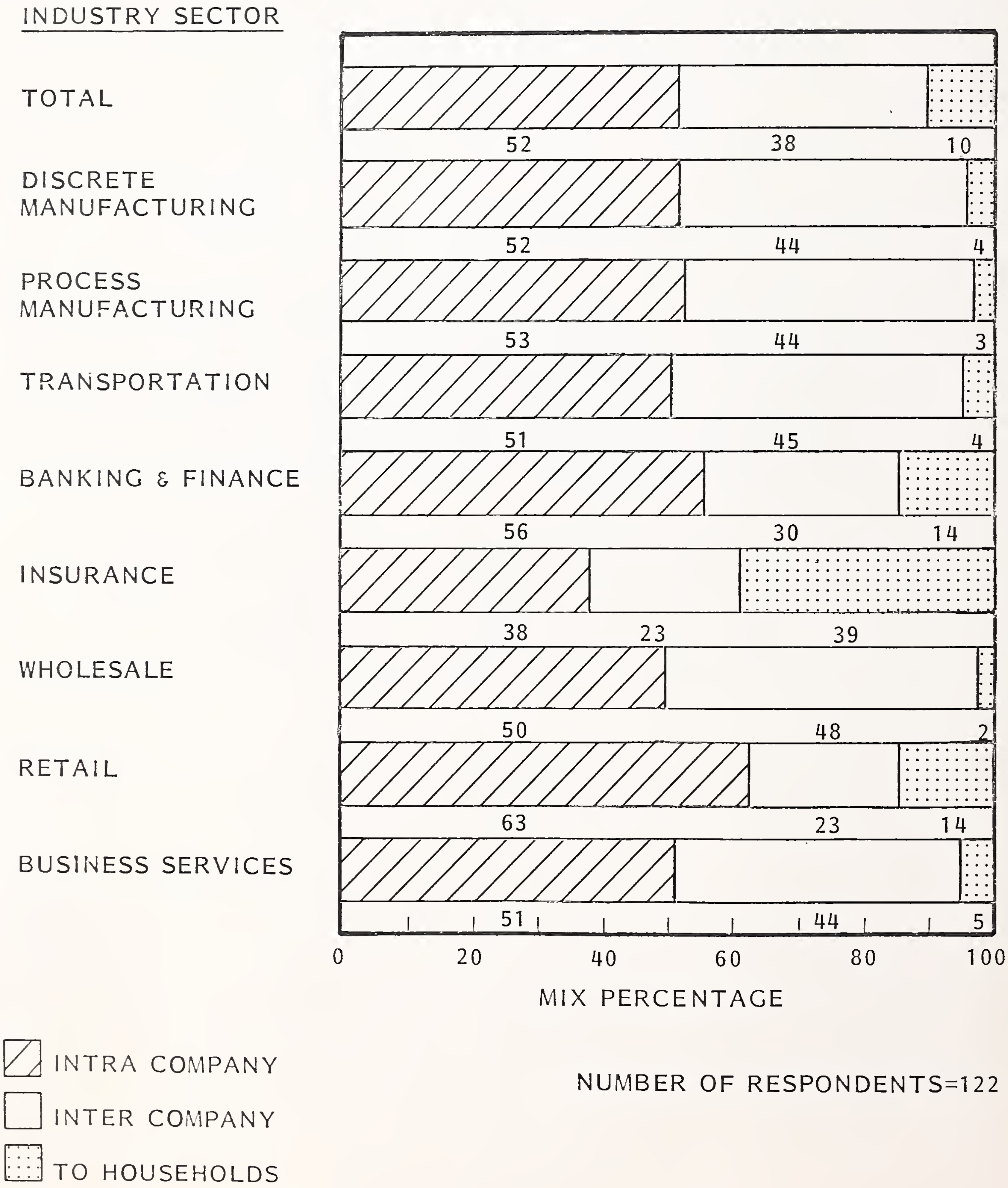
- Headquarters establishments tend to send much more mail to other locations within their own company than independent companies send. This distinction is shown in Exhibit III-1 and III-2 where the intra-company mail traffic was 52% for headquarters and 19% for independents.

- Independents sent much more of their mail traffic outside of their own company to suppliers and to customers, and to both business and households.

- This points up a key difference between headquarters and independent establishments. While company size and organization are the differences used in defining these categories (see Appendix C - Definitions) the operational differences are even more important. Headquarters establishments deal primarily with the other company locations under their control. In general

EXHIBIT III-1

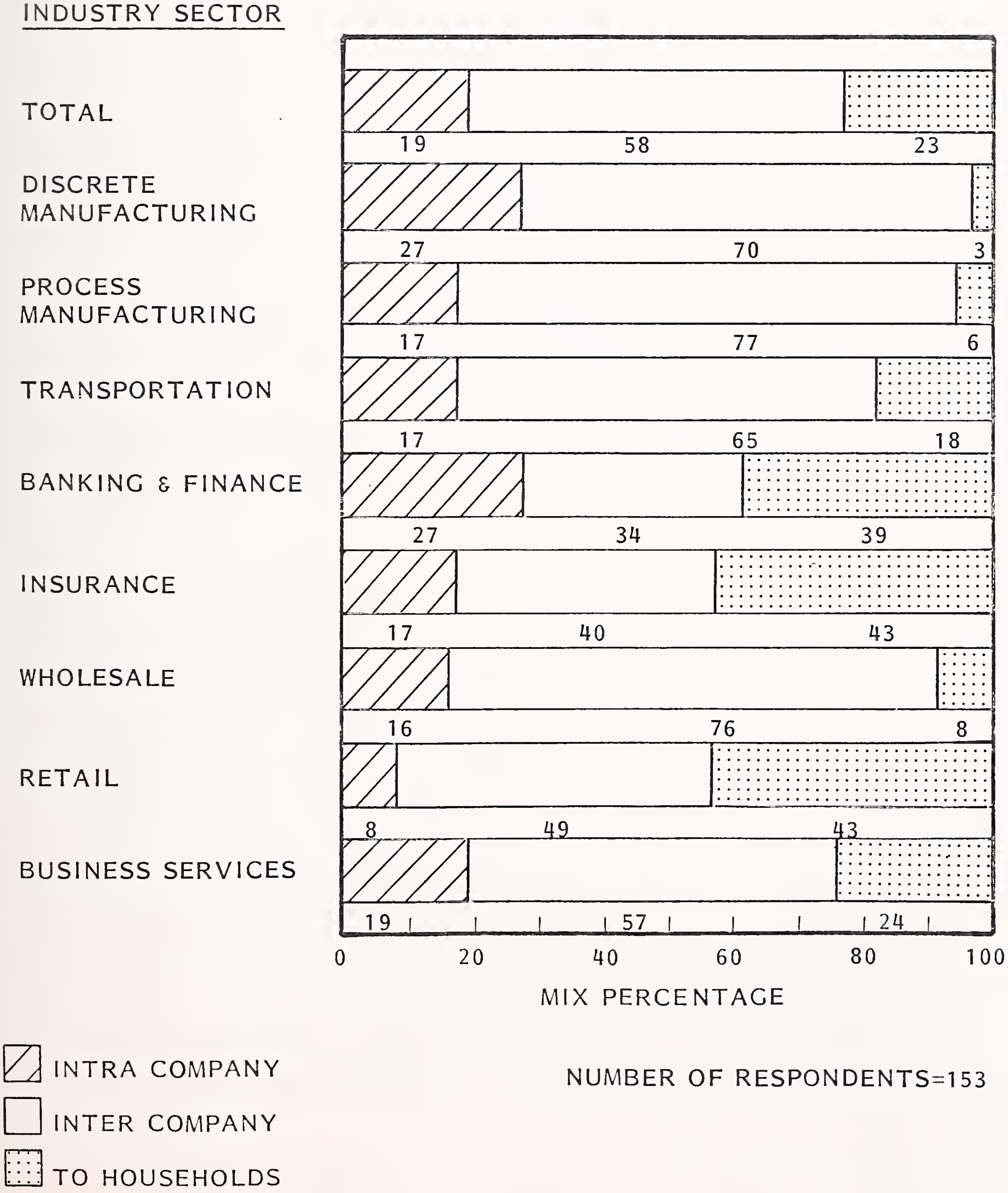
DESTINATION OF MAIL FROM HEADQUARTERS ESTABLISHMENTS



NUMBER OF RESPONDENTS=122

EXHIBIT III-2

DESTINATION OF MAIL FROM INDEPENDENT ESTABLISHMENTS



NUMBER OF RESPONDENTS=153

they leave the dealings with other companies, and (to an even greater extent) the dealings with consumers, to the branch locations. Independent establishments have no such next layer of organization, so they deal directly with other companies and consumers. Branches of larger companies tend to have communication patterns similar to independent establishments.

- The basic communication pattern of headquarters versus independents is seen in all industry sectors. However, this pattern is much more pronounced in some industries than in others.

  - Banking and retail independents have huge fractions (39% and 43%) of their traffic going to households, while the headquarters establishments in these industries send only 14% of their mail to households.

  - In the non-consumer goods industries this different pattern tends to show up in their dealings with other companies rather than with households. The manufacturing, transportation, and wholesaling industries headquarters establishments sent 44% to 48% of their mail traffic to other companies while their independent counterparts sent 65% to 77% to other companies.

  - Only in insurance do headquarters and independents appear to act alike in their mail operations. Insurance is an industry with a number of interesting anomalies in its communication applications, as we will see later.

2. APPLICATIONS OF MAIL

- In both the on-site and the telephone interviews, users were asked an open ended question about their largest volume mail applications. Obviously a wide range of answers was obtained. Similar questions about applications and similar ranges of answers were obtained for other means of communication such as Telex and Teletex. In order to compare these applications between mail and communications services, INPUT categorized the answers into a standardized set of applications. Since this is the first time the reader will see this standardized set of applications, we will define and discuss them in this section.

- In Exhibit III-3 these applications of mail are shown by the frequency of their usage by corporate headquarters and by independent establishments. The numbers in the exhibit are the percentage of times the applications are mentioned as being the largest applications by volume of all the applications by the respondents. While there are 316 "mentions," it should be noted that some respondents mentioned more than one application and some respondents did not answer this question. Since these are the "largest volume applications," this exhibit represents an exaggerated traffic pattern with the largest applications being overstated and the smaller applications being understated.

- Inbound transactions represent sales orders, claims, and other specific, single, action-related messages. Usually they represent some financial commitment between organizations. The volume shown of these inbound transactions appears very low, but it should be pointed out that the question asked was related to outgoing mail, and therefore inbound transactions should not even appear on this chart. Inbound transactions usually represent 300 to 1,000 characters of information.

- Outbound transactions are primarily bills, but they also include purchase orders, bills of lading, payments, acknowledgements of sales orders, etc. Outbound transactions are by far the largest mail application for most users, especially the independent companies who, as noted earlier, deal directly with other companies and households. Outbound transactions usually represent 300 to 1000 characters of information.

- Correspondence is usually defined by the user as exactly that. However, it is INPUT's experience that this category is usually overstated by users in that they include in this category many other specific applications such as dunning notices, delivery advice, and other messages which should more properly be categorized as transactions. Even making some allowances for such over-

EXHIBIT III-3

APPLICATIONS OF MAIL

APPLICATION TYPE	PERCENTAGE OF APPLICATIONS MENTIONS		
	HEAD-QUARTERS	INDEPEN-DENTS	TOTAL
TRANSACTIONS-INBOUND	4%	7%	6%
TRANSACTIONS-OUTBOUND	39	58	48
CORRESPONDENCE	29	22	25
ADVERTISING	3	5	4
REPORTS	12	4	8
DOCUMENTS	0	1	1
INSTRUCTIONS	4	2	3
INTRA-COMPANY	9	1	5
TOTAL	100%	100%	100%
TOTAL NUMBER OF MENTIONS	159	157	316

statements, correspondence is still a large mail application for both headquarters and independents. Correspondence averages slightly more than one page or about 4,000 characters per message.

- Advertising includes traffic specified as advertising as well as promotion letters and catalogues. It is shown as a low percentage. However, it is one that is certainly understated in absolute volumes. The amount of information in a typical advertising message varies widely, but most would fall between 5,000 and 25,000 characters.

- Reports include summary documents, frequently involving accounting data. They range in size from brief, less than one page, data summaries such as payroll reports, up to large multipage text and graphic reports such as the document you are now reading. While reports are shown to be only 8% of the total mentions for mail applications, they become more important in other contexts. Also, as one might expect, reports are more important in headquarters establishments than they are in independents. Reports also can range from 1,000 characters to 1 million characters. A large number of reports fall into the 5 page, 15,000 character range.

- Documents include specific papers, which themselves have inherent value by reason of signatures, registration or, uniqueness. They include insurance policies, securities, and legal documents. Note that checks, deposits, and other financial instruments were treated as transactions for purposes of this study because of their increasing electronic transmittability. Documents were very low in terms of "largest volume" mentions for mail, but, as we shall see later, this does not reflect their importance in the minds of the users. Documents have a narrower size range than reports, and there is a large quantity of documents falling in the five-page, 25,000 character range.

- Instructions are non-specific, future action-related messages. They are often addressed to multiple people and locations. Their primary characteristic is that they are usually related to multiple, future actions rather than to any one specific transaction. They are a small percentage of mail applications.

Instructions are about the same size as correspondence, that is about 4,000 characters per instruction.

- Intra-company messages are a catch-all category for those user responses which did not define a more specific application. Rather than eliminate these as unresponsive, we elected to include them as an "other" category. As expected, headquarters' establishments are much more involved in the use of these intra-company mailings than branches or independents. These are typically very brief messages, falling in the 300 to 500 character range.

3. METHODS OF HANDLING MAIL

- While mail transmission of messages is an extremely important capability for both headquarters and independent establishments, the situation in Canada relative to the performance of mail is very unsatisfactory, primarily because of the performance of Canada Post. Also, the growing use of alternatives, particularly commercial courier services, was so pronounced during our pilot interviews that we included some separate questions on the topic in the main sequence of the interviews.

- A definition of the problems which companies encounter in using Canada Post is listed in Exhibit III-4. While only 255 specific problems were mentioned, many respondents gave responses such as "lousy," "not good at all," and even some literally unprintable responses. There were very few respondents who did not regard Canada Post's performance as a serious problem to them and even fewer respondents who regarded the Canada Post as satisfactory.

- The largest problem is delivery delays. Delays of three to four days for intra-city mail are apparently commonplace.

- The second problem, that of unreliable service, is related to the delay problem. Users feel that if they could count on a fixed delay time, however long, they could in many instances make allowances for this. But the delay time is not reliable. It can vary from one day to many weeks.

EXHIBIT III-4

PROBLEMS WITH CANADA POST

TYPE OF PROBLEM	NUMBER OF MENTIONS		
	HEAD-QUARTERS	INDEPENDENT	TOTAL
DELIVERY DELAYS	69	82	151
RELIABILITY	38	29	67
COST	11	6	17
OTHER	14	6	20
TOTAL	132	123	255

- While cost is mentioned, most users mentioned it as an additional rather than the primary problem.

- Other problems mentioned in relation to the Canada Post, such as efficiency, the ability to move money, etc., while vague, were sufficiently infrequent that they were not investigated in detail.

- The vast majority of respondent companies use commercial couriers to move at least some portion of their mail, as seen in Exhibit III-5.

- Almost all headquarters establishments (95%) use commercial couriers, although some specific industries in the independent establishments category show a lower percentage of users. These are the retailers who need to get bills to households and independent truckers who use their own vehicles which are not considered commercial couriers.

- While a very large percentage of companies use commercial courier services, they still send most of their mail volume by Canada Post. In Exhibit III-6, the percentage of total mail volume which users send via courier is shown. The remainder of the mail is handled by Canada Post.

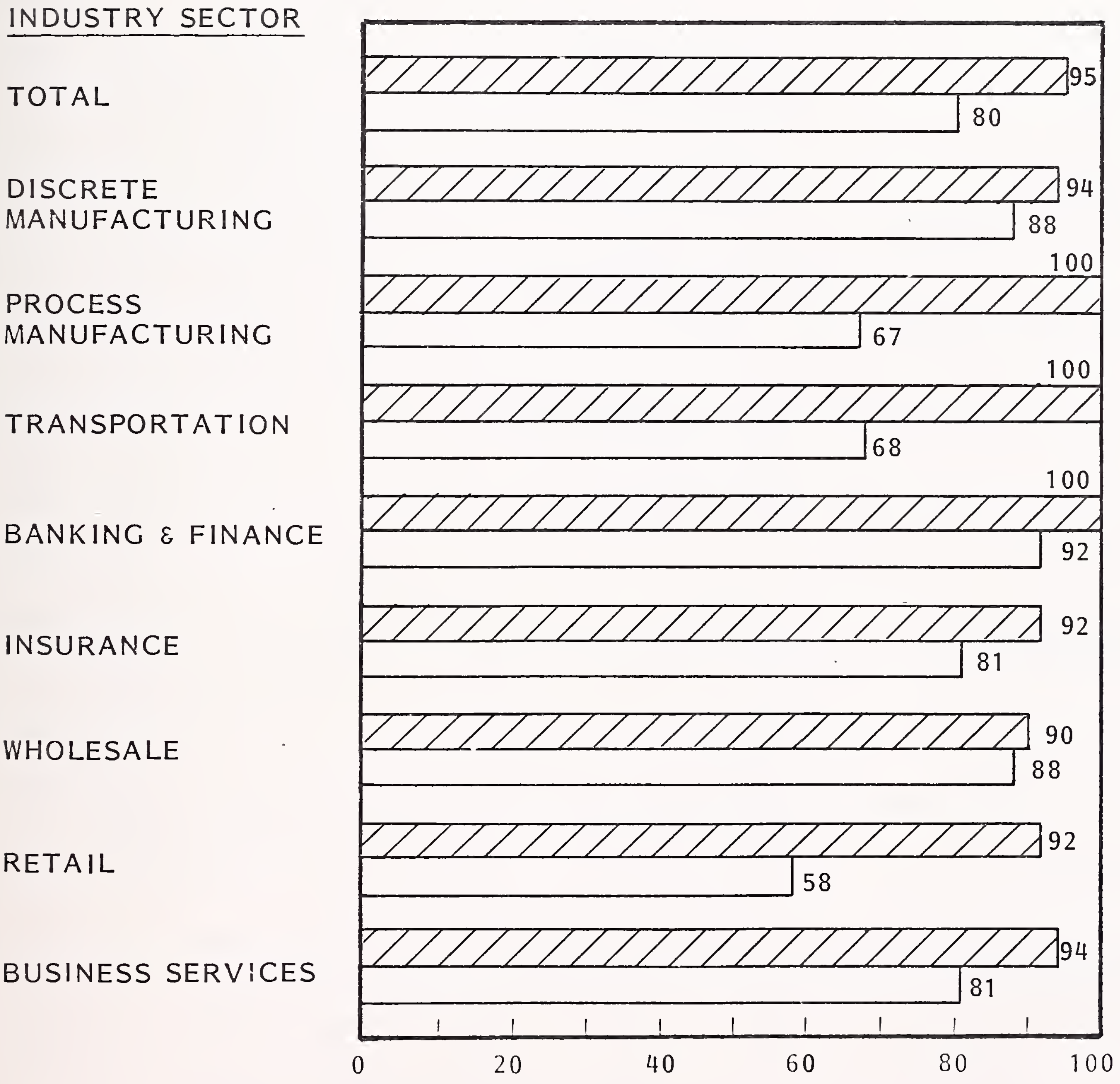
- Headquarters establishments send 26% of their mail via courier while independents send only 15%. This difference is largely attributable to the different destination patterns as seen earlier.

- This distinction between headquarters and independents is borne out by an examination of the industry sectors in Exhibit III-6. Those industries with high household mail requirements, such as banking, insurance, and retail, are low in their percentage of mail traffic handled by courier. Note that in every industry sector the headquarters use couriers to a larger extent than branches do.

- There is an unmeasured but distinct feeling of growing dissatisfaction by many users about courier services. The feeling seems to be that as the couriers get

EXHIBIT III-5

COMPANIES USING COURIERS FOR SOME PORTION OF THEIR MAIL



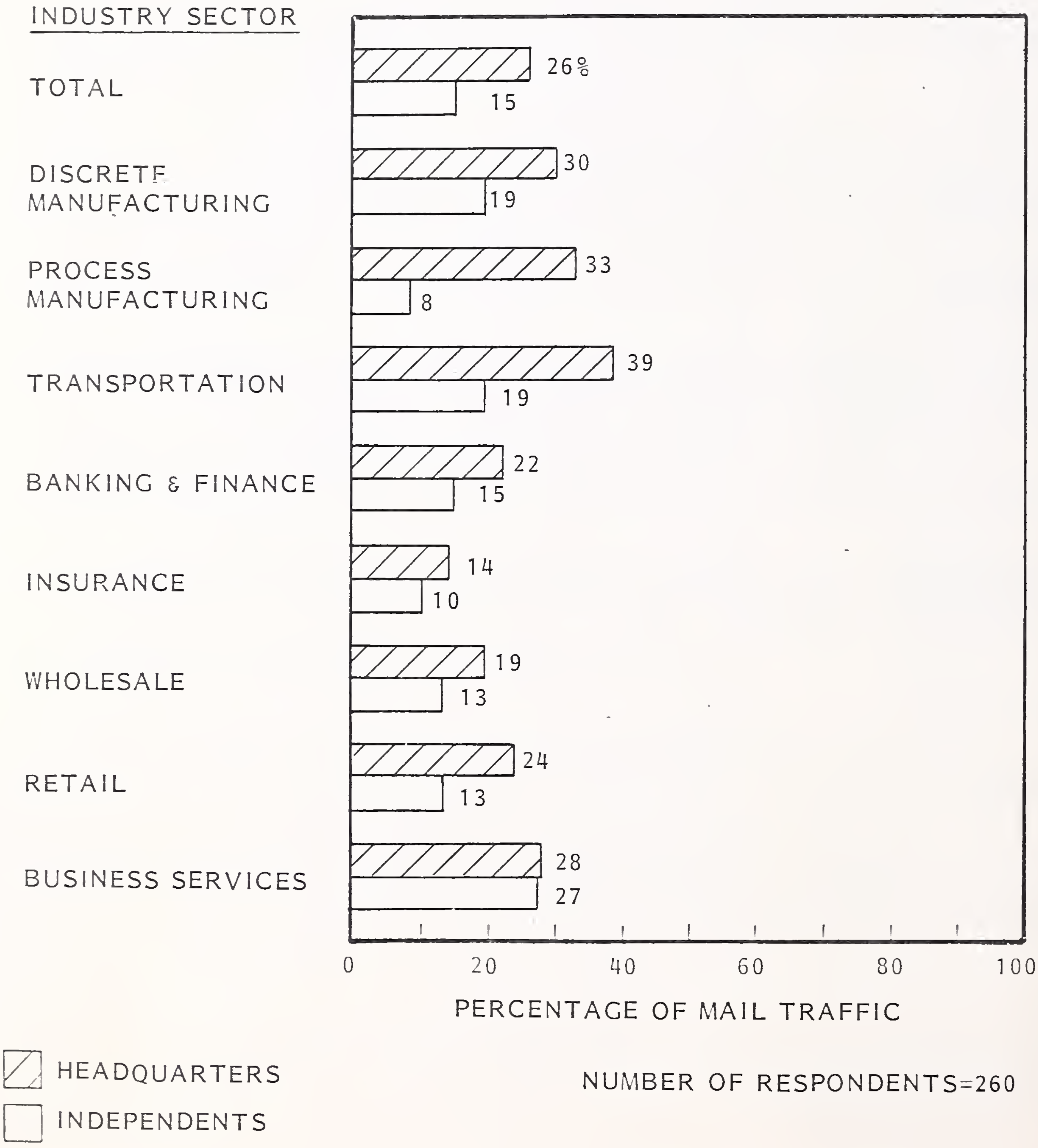
▨ HEADQUARTERS

☐ INDEPENDENTS

NUMBER OF RESPONDENTS=260

EXHIBIT III-6

PROPORTION OF MAIL TRAFFIC HANDLED BY COURIER



NUMBER OF RESPONDENTS=260

larger their level of reliability goes down and that they may be, at some not too distant future point, as unreliable as Canada Post.

B. TEXT EDITORS

I. TEXT EDITORS - 1979

- A text editor or word processor is a term which has a different meaning to different people. In some cases the respondents used the term to apply to memory typewriters or even electric typewriters. In some cases, particularly with small companies, the respondent simply did not know what it was. For purposes of this study and for the interviews which are a part of this study, a text editor is a typing work station with sufficient internal memory to store at least one complete page and enough internal logic to perform word editing. The minimum text editor considered was the IBM MT/ST.

- Given this definition, 34% of the respondents use at least one text editor at their location.

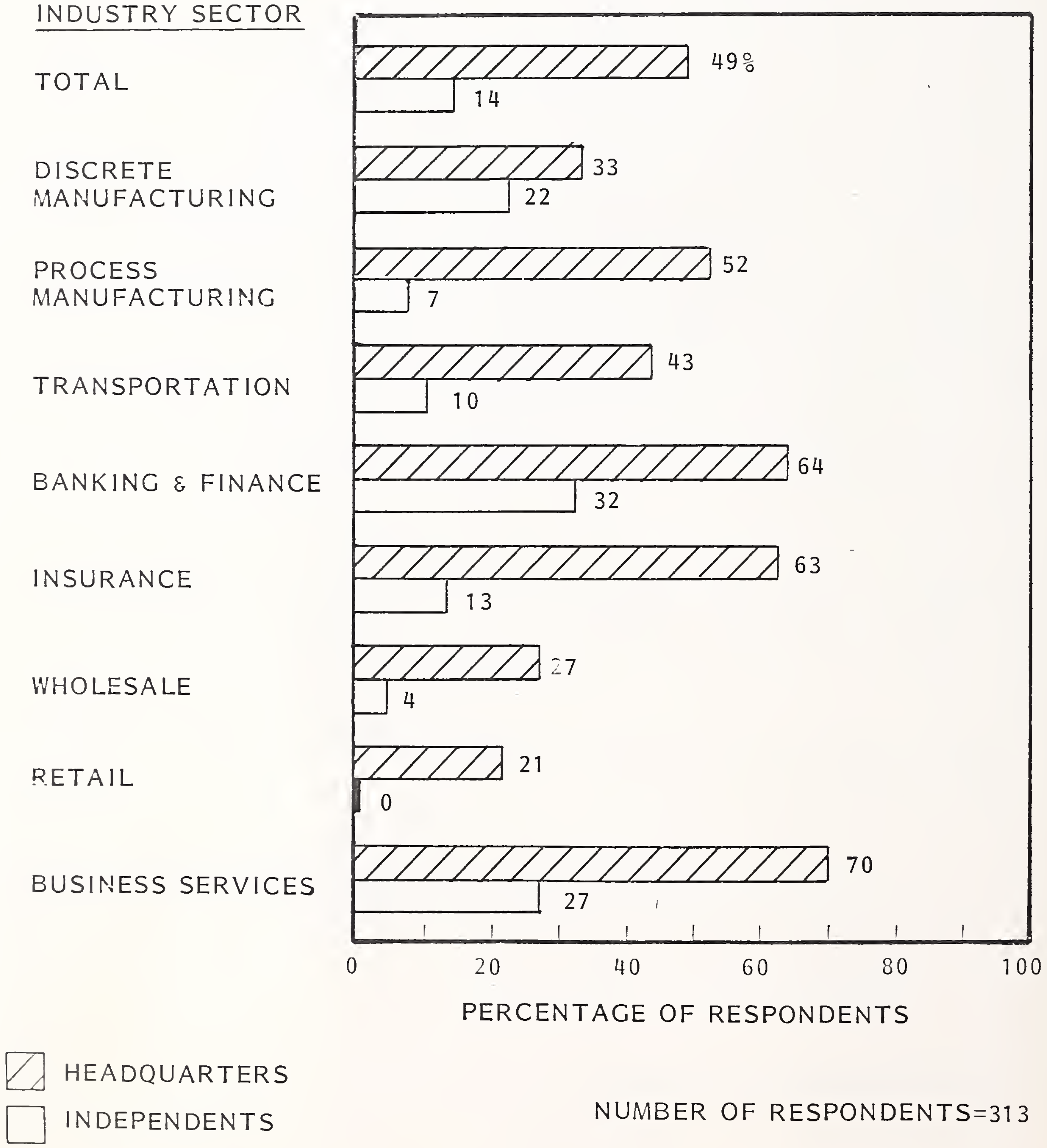
- The use of text editors varies widely by organization type and by industry, as shown in Exhibit III-7. Almost half (49%) of headquarters' establishments use text editors whereas only 14% of independents use them.

- This variation in level of use becomes even more pronounced when we examine the individual industry sectors.

    - The "paper producing" industries (banking, insurance, business services) are very high in their level of use of text editors. This is true for both headquarters and independents, at least in banking and business services.

EXHIBIT III-7

COMPANIES USING TEXT EDITORS - 1979



  - The "physical goods" industries (manufacturing and transportation) are about average in their use of text editors.

  - The "trade" industries (wholesale and retail) are very low in their use of text editors. Only 4% of the independent wholesalers and none of the independent retailers use text editors.

2. TEXT EDITORS - 1983

- When users were asked about their expected use of text editors by 1983, the level of participation increased dramatically, as shown in Exhibit III-8, to the point where INPUT feels that the user assessments may be too optimistic. Note that the level of user reponse to the question is quite high (267 out of 320 users answered this question satisfactorily).

- On average, 63% of the respondents said that their organizations would probably be using text editors by 1983. This is almost twice the 34% level of use in 1979.

- Seventy-five percent of headquarters establishments' respondents believe that they will be using text editors by 1983.

- Fifty percent of independents will be using text editors by 1983.

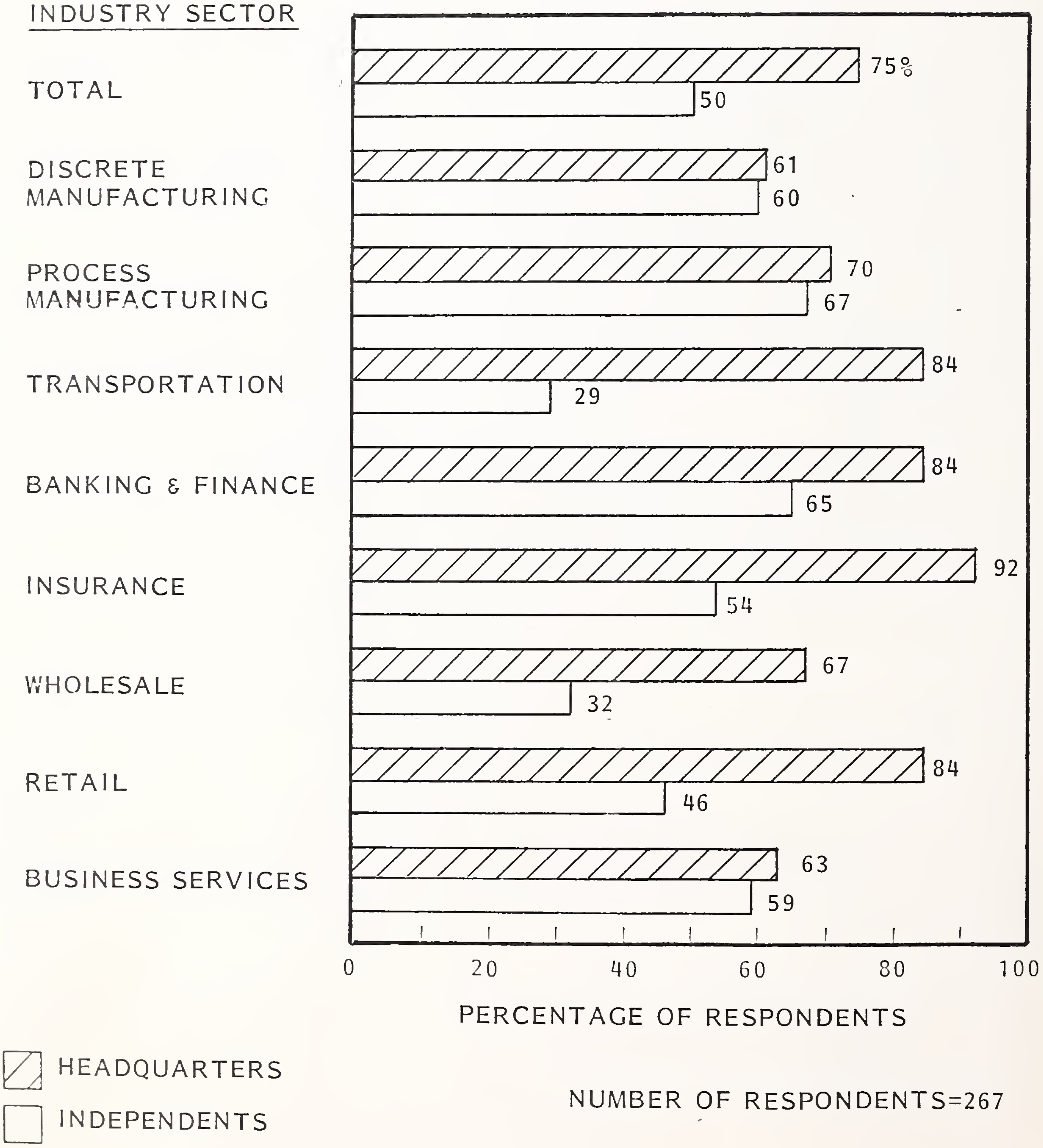
- While the growth of use is visible across all industries, there are some interesting pattern changes to observe.

  - The independents use of text editors in the two manufacturing industries has become almost even with their headquarters counterparts.

  - The independents in the trade industries have growth from little or no usage to almost half that of the headquarters establishments. The growth is especially dramatic in independent retailers.

EXHIBIT III-8

COMPANIES EXPECTING TO USE TEXT EDITORS - 1983



NUMBER OF RESPONDENTS=267

  - The usage in headquarters establishments of business services firms has actually declined. There were some users in this sector who regard text editors as an "oversold product" and plan to actually decrease their involvement in its use.

3. APPLICATIONS OF TEXT EDITORS

- Using the same standardized set of applications for text editors as was used for mail, the uses of text editors are shown in Exhibit III-9. Notice that the total number of mentions is 112, approximately the one-third who are using text editors.

- The three big and almost equal applications are correspondence, reports, and documents.

  - The correspondence application is in large part related to repetitive correspondence, such as form letters.

  - Reports and documents are also distributed between long reports and documents and complex or highly formatted reports and documents, such as accounting reports.

- Transactions are not a big application of text editors today. This will have strong implications when we relate text editor applications to Teletex.

- The intra-company "catch-all" category is not mentioned at all in Exhibit III-9. The implication of this is that the users understand what their text editors are doing.

4. REASONS FOR NOT USING TEXT EDITORS

- Many different reasons were given for not using text editors, as shown in Exhibit III-10.

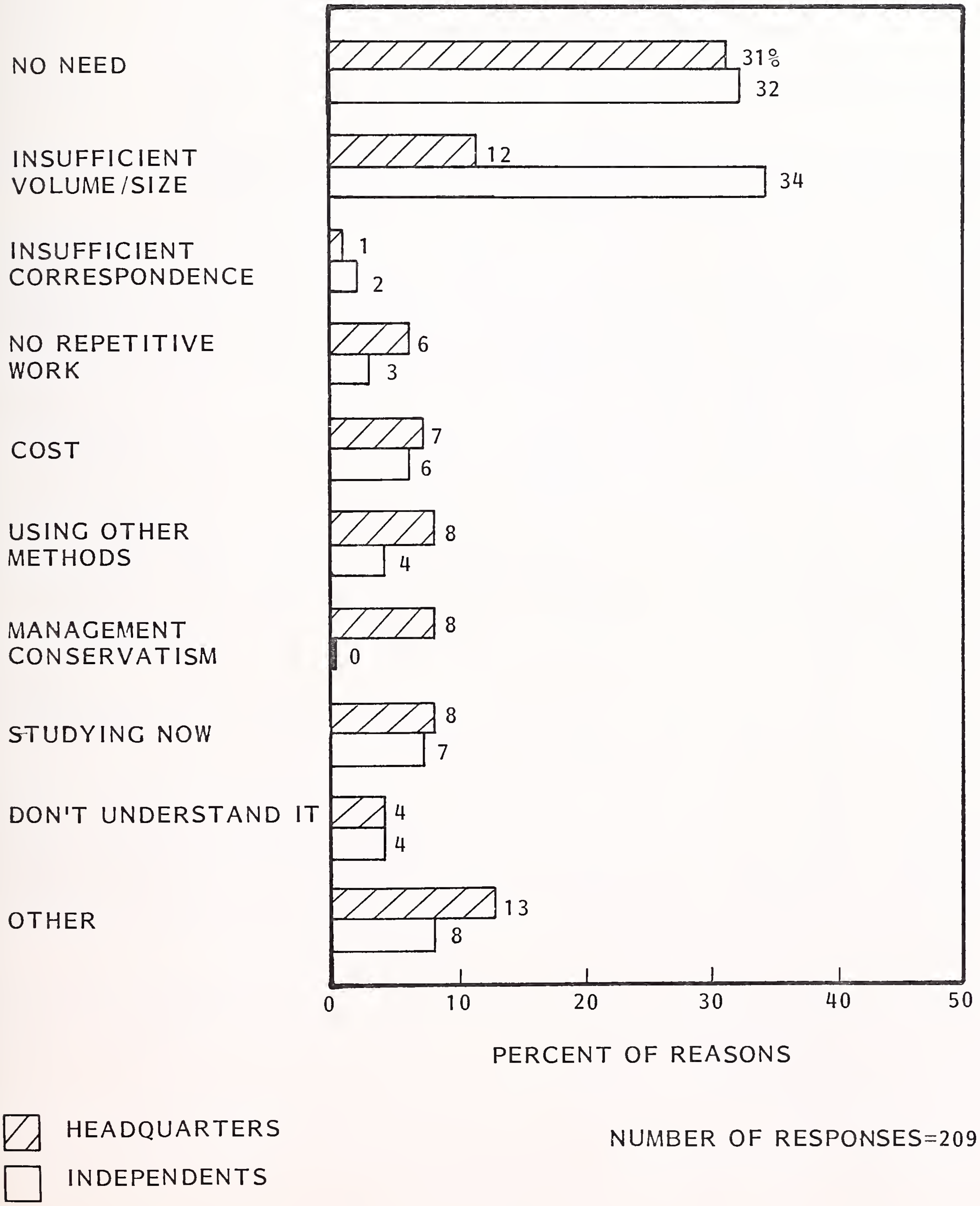
EXHIBIT III-9

APPLICATIONS OF TEXT EDITORS

APPLICATION TYPE	PERCENTAGE OF APPLICATION MENTIONS		
	HEAD-QUARTERS	INDEPEN-DENT	TOTAL
TRANSACTIONS-INBOUND	0%	0%	0%
TRANSACTIONS-OUTBOUND	6	3	5
CORRESPONDENCE	36	29	34
ADVERTISING	6	0	5
REPORTS	29	39	31
DOCUMENTS	22	29	23
INSTRUCTIONS	2	0	2
INTRA-COMPANY	0	0	0
TOTAL	100%	100%	100%
TOTAL NUMBER OF MENTIONS	84	28	112

EXHIBIT III-10

REASONS FOR NOT USING TEXT EDITORS



NUMBER OF RESPONSES=209

- The largest single reason was the rather vague "no need," and the second largest reason was the slightly less vague "insufficient volume/size/correspondence/repetitive work."

- A sizeable percentage of respondents are presently studying it and, in headquarters companies, are blaming management conservatism. The respondents providing these answers were usually found in the "will use in 1983" category.

- A surprisingly large percentage (8%) admit to not understanding text editors well enough to make a decision.

- The overall impression which one might correctly infer from this chart is that text editing is in fact poorly understood by most business people in Canada today. However, they are aware of it, and the optimistic growth expectations of Exhibit III-8 are not so unrealistic.

5. NUMBERS OF TEXT EDITORS INSTALLED

- At the 320 establishments interviewed, a total of 286 text editors were reported installed, as shown in Exhibit III-11. This assessment is likely to be slightly on the low side for the following reasons:

  - Some companies reported that they used text editors but did not report any number of installations.

  - Some companies reported the type of text editor but not the quantity. In many of these cases, the quantity is more than the one which we used in the data analysis.

  - In any survey of this kind, the installations reported are always less than actual because some of the installations are unknown to the respondent.

EXHIBIT III-11

NUMBER OF TEXT EDITORS INSTALLED - TOTAL

COMPANIES BY EMPLOYEE SIZE	INDUSTRIES								
	DISCRETE MANUFACTURING	PROCESS MANUFACTURING	TRANSPORTATION	BANKING AND FINANCE	INSURANCE	WHOLESALE	RETAIL	BUSINESS SERVICES	TOTAL
COMPANIES IN SURVEY	6.0	4.0	9.0	3.0	10.0	11.0	10.0	11.0	64.0
COMPANIES USING TEXT EDITORS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0
INSTALLED TEXT EDITORS	–	–	–	–	–	–	–	3.0	3.0
TOTAL EMPLOYEES	71.0	29.0	111.0	20.0	98.0	109.0	70.0	94.0	602.0
TEXT EDITORS/1000 EMP.	–	–	–	–	–	–	–	*	*
COMPANIES IN SURVEY	10.0	9.0	11.0	19.0	8.0	12.0	10.0	10.0	89.0
COMPANIES USING TEXT EDITORS	3.0	0.0	2.0	3.0	1.0	1.0	1.0	7.0	18.0
INSTALLED TEXT EDITORS	7.0	–	3.0	5.0	2.0	2.0	1.0	12.0	32.0
TOTAL EMPLOYEES	550.0	339.0	519.0	868.0	349.0	566.0	507.0	656.0	4,354.0
TEXT EDITORS/1000 EMP.	*	–	*	*	*	*	*	18.3	7.4
COMPANIES IN SURVEY	20.0	23.0	17.0	21.0	14.0	12.0	13.0	20.0	138.0
COMPANIES USING TEXT EDITORS	6.0	12.0	7.0	10.0	9.0	2.0	4.0	9.0	58.0
INSTALLED TEXT EDITORS	19.0	39.0	18.0	39.0	56.0	2.0	33.0	23.0	229.0
TOTAL EMPLOYEES	7,300.0	8,126.0	8,900.0	13,757.0	9,226.0	2,330.0	14,883.0	5,990.0	70,592.0
TEXT EDITORS/1000 EMP.	2.6	4.8	2.0	2.8	6.1	0.9	2.2	3.8	3.3
COMPANIES IN SURVEY	4.0	6.0	4.0	5.0	1.0	0.0	3.0	4.0	27.0
COMPANIES USING TEXT EDITORS	1.0	2.0	0.0	5.0	0.0	0.0	1.0	2.0	11.0
INSTALLED TEXT EDITORS	1.0	3.0	–	15.0	–	–	1.0	2.0	22.0
TOTAL EMPLOYEES	–	–	–	–	–	–	–	–	–
TEXT EDITORS/1000 EMP.	–	–	–	–	–	–	–	–	–
COMPANIES IN SURVEY	40.0	42.0	41.0	48.0	33.0	35.0	36.0	45.0	320.0
COMPANIES USING TEXT EDITORS	10.0	14.0	9.0	18.0	10.0	3.0	6.0	19.0	88.0
INSTALLED TEXT EDITORS	27.0	42.0	21.0	59.0	58.0	4.0	35.0	40.0	286.0
TOTAL EMPLOYEES	8,001.0	8,494.0	9,530.0	14,645.0	9,673.0	3,005.0	15,460.0	6,740.0	75,548.0
TEXT EDITORS/1000 EMP.	3.4	4.9	2.2	4.0	6.0	1.3	2.2	6.0	3.8

* = TOO SMALL TO BE MEANINGFUL.

  - This is probably less true of text editors than it is of timesharing terminals, but it is still an error on the low side.

- INPUT believes that the most probable installation quantity for this survey is about 325 text editors installed.

- In Exhibit III-11, the 286 reported installations are shown by industry and by establishment size.

- Those industries which have high numbers of text editors per 1,000 employees (bottom line of Exhibit III-11) are also, in general, the industries which have a high percentage of user companies.

- The use of text editors shows a distinct pattern by establishment size. Forty percent of the establishments with more than 100 employees use text editors. Twenty percent of the establishments with between 20 and 99 employees use them. Only one company in the under 20 employee range uses text editors, and that particular company happens to be a commercial text editing service provider.

- The total (bottom) figure of 3.8 text editors per 1,000 employees will be used for forecasting purposes later in this report.

- Of the total number of text editors installed, over 90% are installed at establishments which have at least two units.

- In Exhibit III-12 and III-13, this same data are distributed for headquarters and for independent establishments.

- The interesting point about these two exhibits is the relative similarity of the total data between these two quite different groups of establishments, particularly with respect to the text editors/1,000 employees.

EXHIBIIT III-12

NUMBER OF TEXT EDITORS INSTALLED - HEADQUARTERS

COMPANIES BY EMPLOYEE SIZE	INDUSTRIES								
	DISCRETE MANUFACTURING	PROCESS MANUFACTURING	TRANSPORTATION	BANKING AND FINANCE	INSURANCE	WHOLESALE	RETAIL	BUSINESS SERVICES	TOTAL
COMPANIES IN SURVEY	4.0	0.0	2.0	0.0	3.0	1.0	1.0	2.0	13.0
COMPANIES USING TEXT EDITORS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INSTALLED TEXT EDITORS	–	–	–	–	–	–	–	–	–
TOTAL EMPLOYEES	47.0	0.0	30.0	0.0	37.0	16.0	12.0	22.0	164.0
TEXT EDITORS/1000 EMP.	–	–	–	–	–	–	–	–	0.0
COMPANIES IN SURVEY	5.0	3.0	3.0	2.0	3.0	3.0	5.0	6.0	30.0
COMPANIES USING TEXT EDITORS	2.0	0.0	1.0	1.0	1.0	1.0	1.0	4.0	11.0
INSTALLED TEXT EDITORS	5.0	0.0	1.0	1.0	2.0	2.0	1.0	8.0	20.0
TOTAL EMPLOYEES	231.0	105.0	225.0	100.0	156.0	200.0	307.0	415.0	1,739.0
TEXT EDITORS/1000 EMP.	*	0.0	*	*	*	*	*	*	11.5
COMPANIES IN SURVEY	10.0	18.0	13.0	17.0	10.0	7.0	13.0	12.0	98.0
COMPANIES USING TEXT EDITORS	4.0	11.0	7.0	9.0	7.0	2.0	4.0	7.0	50.0
INSTALLED TEXT EDITORS	13.0	38.0	18.0	34.0	53.0	2.0	33.0	18.0	209.0
TOTAL EMPLOYEES	5,580.0	7,236.0	8,125.0	13,107.0	8,616.0	1,255.0	14,883.0	4,420.0	62,582.0
TEXT EDITORS/1000 EMP.	2.3	5.3	2.2	2.6	6.2	*	2.2	4.1	3.3
COMPANIES IN SURVEY	3.0	6.0	3.0	4.0	0.0	0.0	2.0	2.0	20.0
COMPANIES USING TEXT EDITORS	1.0	2.0	0.0	4.0	0.0	0.0	1.0	2.0	10.0
INSTALLED TEXT EDITORS	1.0	3.0	0.0	14.0	0.0	0.0	1.0	2.0	21.0
TOTAL EMPLOYEES	–	–	–	–	–	–	–	–	–
TEXT EDITORS/1000 EMP.	–	–	–	–	–	–	–	–	–
COMPANIES IN SURVEY	22.0	27.0	21.0	23.0	16.0	11.0	21.0	22.0	163.0
COMPANIES USING TEXT EDITORS	7.0	13.0	8.0	14.0	8.0	3.0	6.0	13.0	71.0
INSTALLED TEXT EDITORS	19.0	41.0	19.0	49.0	55.0	4.0	35.0	28.0	250.0
TOTAL EMPLOYEES	5,858.0	7,341.0	8,380.0	13,207.0	8,809.0	1,471.0	15,702.0	4,857.0	64,995.0
TEXT EDITORS/1000 EMP.	3.2	5.6	2.3	3.7	6.3	2.7	2.2	5.7	3.8

* = TOO SMALL TO BE MEANINGFUL.

EXHIBIT III-13

NUMBER OF TEXT EDITORS INSTALLED - INDEPENDENTS

COMPANIES BY EMPLOYEE SIZE		INDUSTRIES								
		DISCRETE MANUFACTURING	PROCESS MANUFACTURING	TRANSPORTATION	BANKING AND FINANCE	WHOLESALE	INSURANCE	RETAIL	BUSINESS SERVICES	TOTAL
1 TO 19 EMP.	COMPANIES IN SURVEY	2	4	7	3	7	10	9	9	51.0
	COMPANIES USING TEXT EDITORS	0	0	0	0	0	0	0	1	1.0
	INSTALLED TEXT EDITORS	–	–	–	–	–	–	–	3	3.0
	TOTAL EMPLOYEES	24	29	81	20	61	93	58	72	438.0
	TEXT EDITORS/1000 EMP.	–	–	–	–	–	–	–	*	*
20 TO 99 EMP.	COMPANIES IN SURVEY	5	6	8	17	5	9	5	4	59.0
	COMPANIES USING TEXT EDITORS	* 1	* 0	* 1	* 2	* 0	* 0	* 0	* 3	* 7.0
	INSTALLED TEXT EDITORS	2	–	2	4	–	–	–	4	12.0
	TOTAL EMPLOYEES	319	234	294	768	193	366	200	241	2,615.0
	TEXT EDITORS/1000 EMP.	*	–	*	*	–	–	–	*	4.6
100 + EMP.	COMPANIES IN SURVEY	10	5	4	4	4	5	0	8	40.0
	COMPANIES USING TEXT EDITORS	2	1	0	1	2	0	0	2	8.0
	INSTALLED TEXT EDITORS	6	1	–	5	3	–	–	5	20.0
	TOTAL EMPLOYEES	1,800	890	775	650	610	1,075	–	1,570	7,370.0
	TEXT EDITORS/1000 EMP.	*	*	–	*	*	–	–	*	2.7
? EMP.	COMPANIES IN SURVEY	1	0	1	1	1	0	1	2	7.0
	COMPANIES USING TEXT EDITORS	0	0	0	1	0	0	0	0	1.0
	INSTALLED TEXT EDITORS	–	–	–	1	–	–	–	–	1.0
	TOTAL EMPLOYEES	–	–	–	–	–	–	–	–	–
	TEXT EDITORS/1000 EMP.	–	–	–	–	–	–	–	–	–
TOTAL	COMPANIES IN SURVEY	18	15	20	25	17	24	15	23	157.0
	COMPANIES USING TEXT EDITORS	3	1	1	4	2	0	0	6	17.0
	INSTALLED TEXT EDITORS	8	1	2	10	3	–	–	12	36.0
	TOTAL EMPLOYEES	2,143	1,153	1,150	1,438	864	1,534	258	1,883	10,423.0
	TEXT EDITORS/1000 EMP.	*	*	*	*	*	–	–	*	3.5

* = TOO SMALL TO BE MEANINGFUL.

6. COMMUNICATING TEXT EDITORS - 1979

- Users of communicating text editors are almost non-existent in Canada at present. Exhibit III-14 shows the distribution of such users by industry. This chart represents a total of 16 such users.

- Of these 16 users of communicating text editors, seven are in the banking industry.

- Closer examination of these banking respondents and their use shows a very mixed reaction to the concept itself:

  - Two respondents are just starting.

  - One has never used the capability.

  - One has little use of the capability.

  - Two of the present users of communicating text editors do not expect to be using this function in 1983.

  - With the exception of the two users who are just starting, all of the users have only one communicating text editor each.

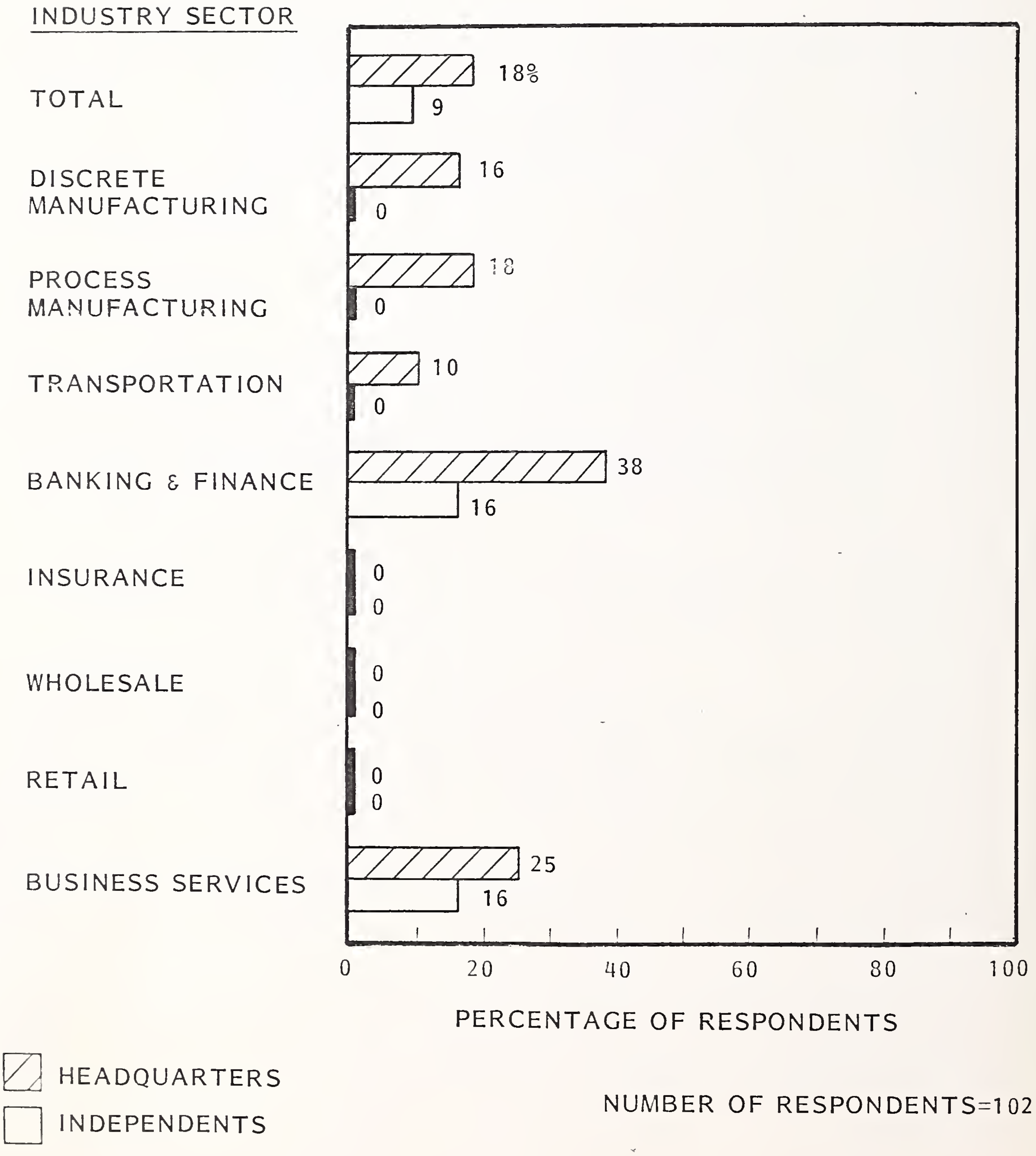
- It should be noted that the question asked of the users was, "Are any of your text editors equipped and used for telecommunications?" During the on-site survey we found some users who actually had text editors equipped for communications and did not know it.

7. COMMUNICATING TEXT EDITORS - 1983

- As with text editors themselves, many more users expect to be using communicating text editors by 1983. Almost half of the present users of text editors expect to be using them to communicate by 1983, as shown in Exhibit III-15.

EXHIBIT III-14

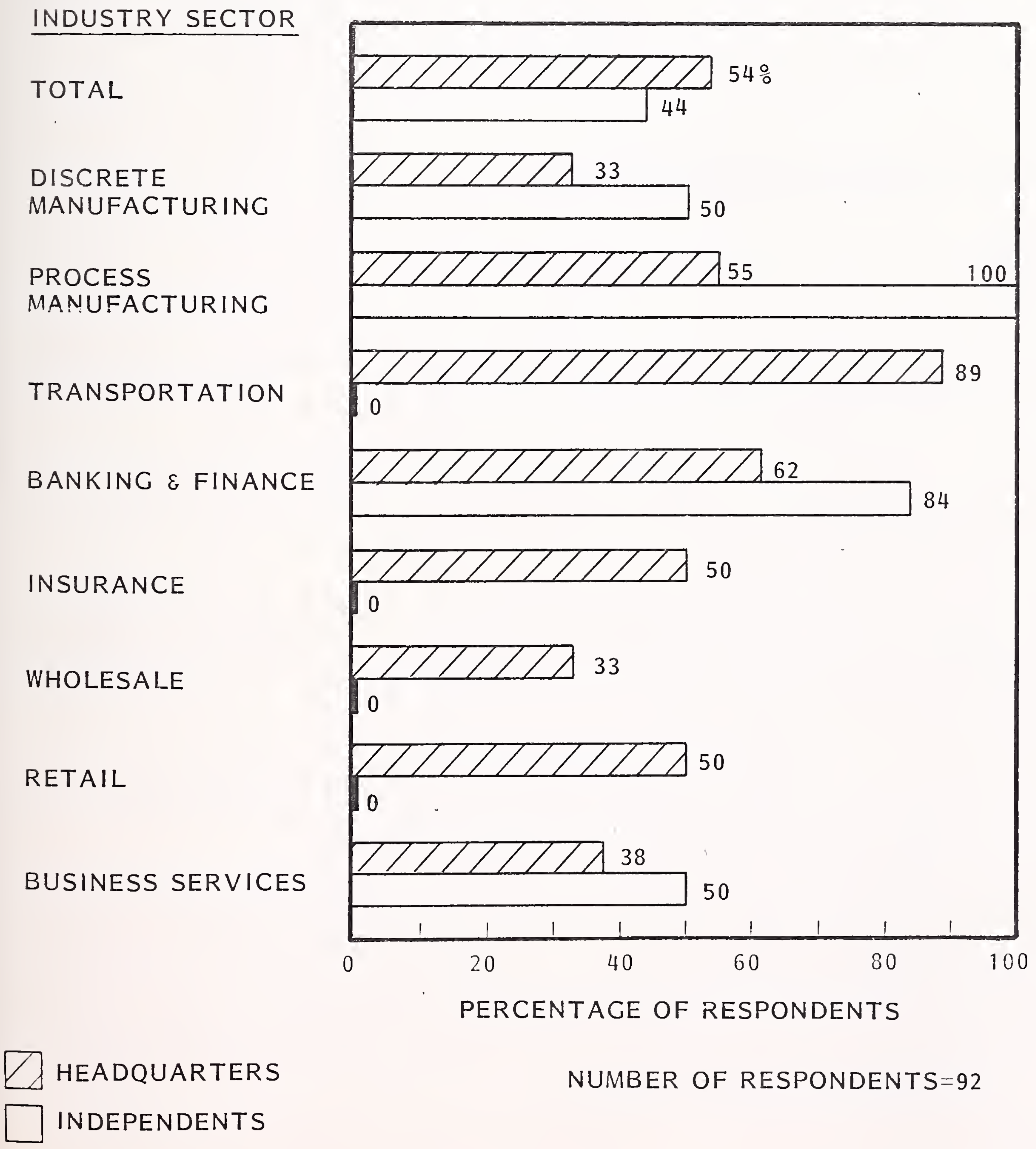
PERCENTAGE OF COMPANIES WHO HAVE TEXT EDITORS AND ARE USING THEM TO COMMUNICATE - 1979



NUMBER OF RESPONDENTS=102

EXHIBIT III-15

PERCENTAGE OF COMPANIES WHO ARE USING TEXT EDITORS NOW AND EXPECT TO USE COMMUNICATING TEXT EDITORS BY 1983



- When examining the attitudes of respondents, neither the industry nor the organization pattern of their answers seem to draw us to any clear conclusion as to why the respondents are or are not expecting to use communicating text exiting typewriters.

- Because of the lack of such a pattern and the mixed reaction to the present use of communications on text editors, we conclude that, as in the United States, this is very much a vendor driven application at this time. Users do not now have a clearly defined need for such a communications method.

C. MESSAGE TELECOMMUNICATIONS

1. TELEX

- Most Canadian firms use Telex. As shown in Exhibit III-16, 81% of headquarters establishments and 64% of the independents use Telex.

- In some industries, such as wholesale and process manufacturing, every company in the survey used Telex.

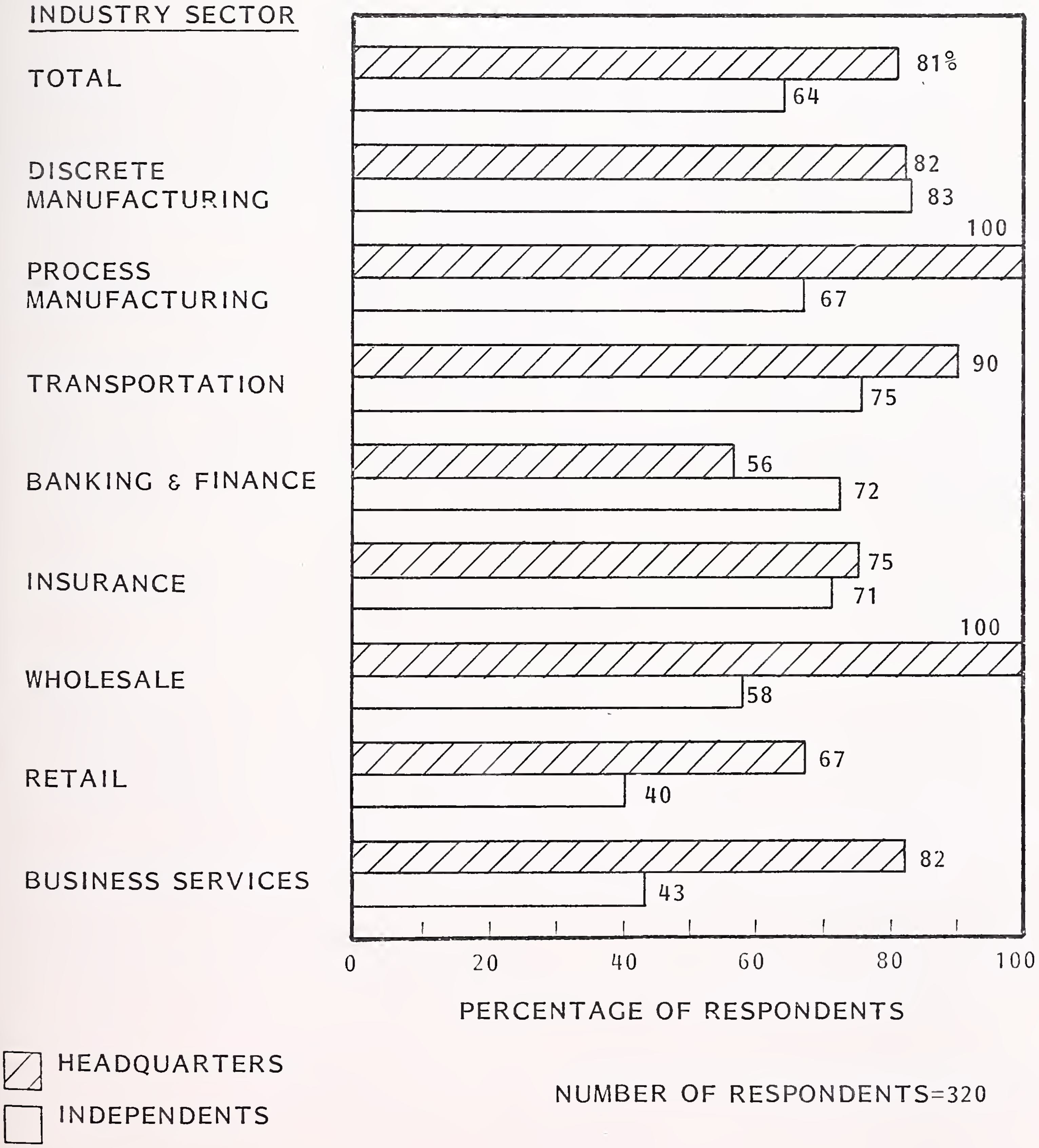
- In banking, the usual organization pattern of headquarters Telex usage being higher than independents Telex usage is reversed. More independent banks use Telex than do headquarters.

- Similarly, in discrete manufacturing and insurance, the independents are as likely to use Telex as are the headquarters.

- The conclusion which seems to apply to these reversals of pattern is that the headquarters of these large firms have gone beyond the use of Telex and have put their message telecommunications applications on private message systems or on data communications networks or possibly use facsimile, as we will see in Exhibit III-17.

EXHIBIT III-16

COMPANIES USING TELEX



2. FACSIMILE

- It appears that facsimile has made a fairly substantial penetration of Canadian business, as shown in Exhibit III-17.

- Headquarters establishments, particularly those in manufacturing and banking, have a high proportion of use of facsimile.

3. MESSAGE TELECOMMUNICATIONS APPLICATIONS

- Again using our standardized set of applications in Exhibit III-18, we see the distribution of applications on message telecommunications systems and services. This consists primarily of Telex but also includes TWX, Telenet, MSDS, facsimile, and private message systems.

- The usual mail type applications show up, but, in addition, the inbound transactions have become an important item.

- The intra-company category has become one of the largest. This general purpose intra-company capability is indeed the usual justification and use of such networks.

4. IMPROVEMENTS DESIRED IN MESSAGE TELECOMMUNICATIONS SERVICES

- When asked what improvements users would like to see in message telecommunications services, the usually expected answers are lower cost and improved performance. In dealing with low speed message services, the increase of transmission speed is usually added because it equates, in most users' minds, with lower cost per unit of information. Indeed, all three of these are the most desired improvements in message telecommunications services, as shown in Exhibit III-19.

EXHIBIT III-17

COMPANIES USING FACSIMILE

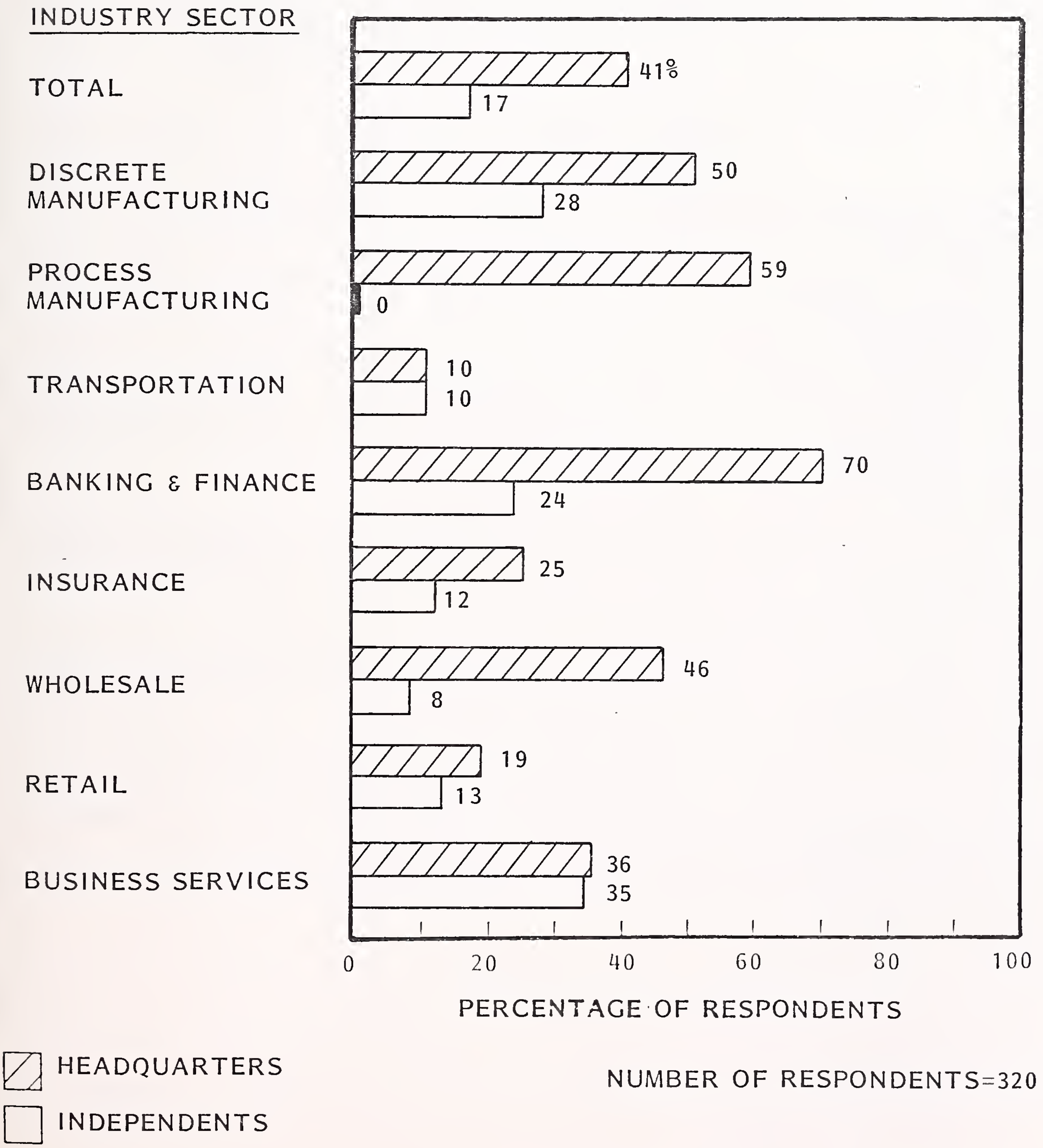


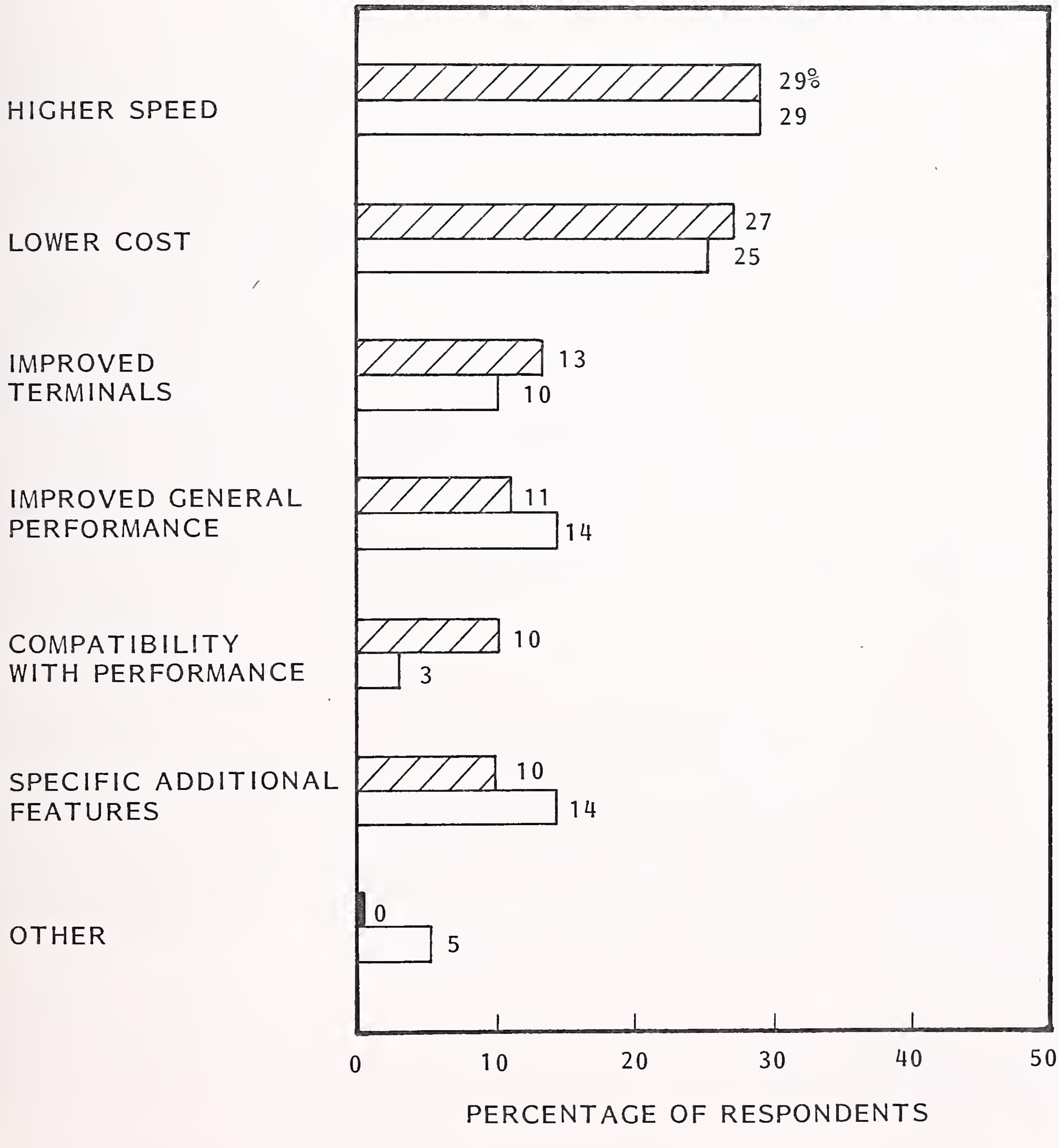
EXHIBIT III-18

APPLICATIONS OF MESSAGE TELECOMMUNICATION SERVICES (TELEX, TWX, PRIVATE WIRE SYSTEMS, FACSIMILE, ETC.)

APPLICATION TYPE	PERCENTAGE OF APPLICATION MENTIONS		
	HEAD-QUARTERS	INDEPEN-DENT	TOTAL
TRANSACTIONS-INBOUND	15%	11%	13%
TRANSACTIONS-OUTBOUND	17	15	16
CORRESPONDENCE	14	33	23
ADVERTISING	3	1	2
REPORTS	18	12	15
DOCUMENTS	7	1	4
INSTRUCTIONS	3	7	5
INTRA-COMPANY	24	21	23
TOTAL	100%	100%	100%
TOTAL NUMBER OF MENTIONS	117	113	230

EXHIBIT III-19

IMPROVEMENTS DESIRED BY USERS OF MESSAGE TELECOMMUNICATIONS SERVICES



NUMBER OF RESPONDENTS=129

▨ HEADQUARTERS

☐ INDEPENDENTS

- Of the specific improvements, improved terminals are the most often requested. This includes display terminals, intelligent terminals, and more operator efficient terminals.

- Compatibility with computers is desired by a number of headquarters establishments.

- Specific additional features, such as Telex to TWX interfaces, reduced "busies" on international lines, and multiple address capabilities, are among the other improvements requested.

5. CHANGES USERS EXPECT TO BE MAKING IN THEIR MESSAGE TELECOMMUNICATIONS SYSTEMS

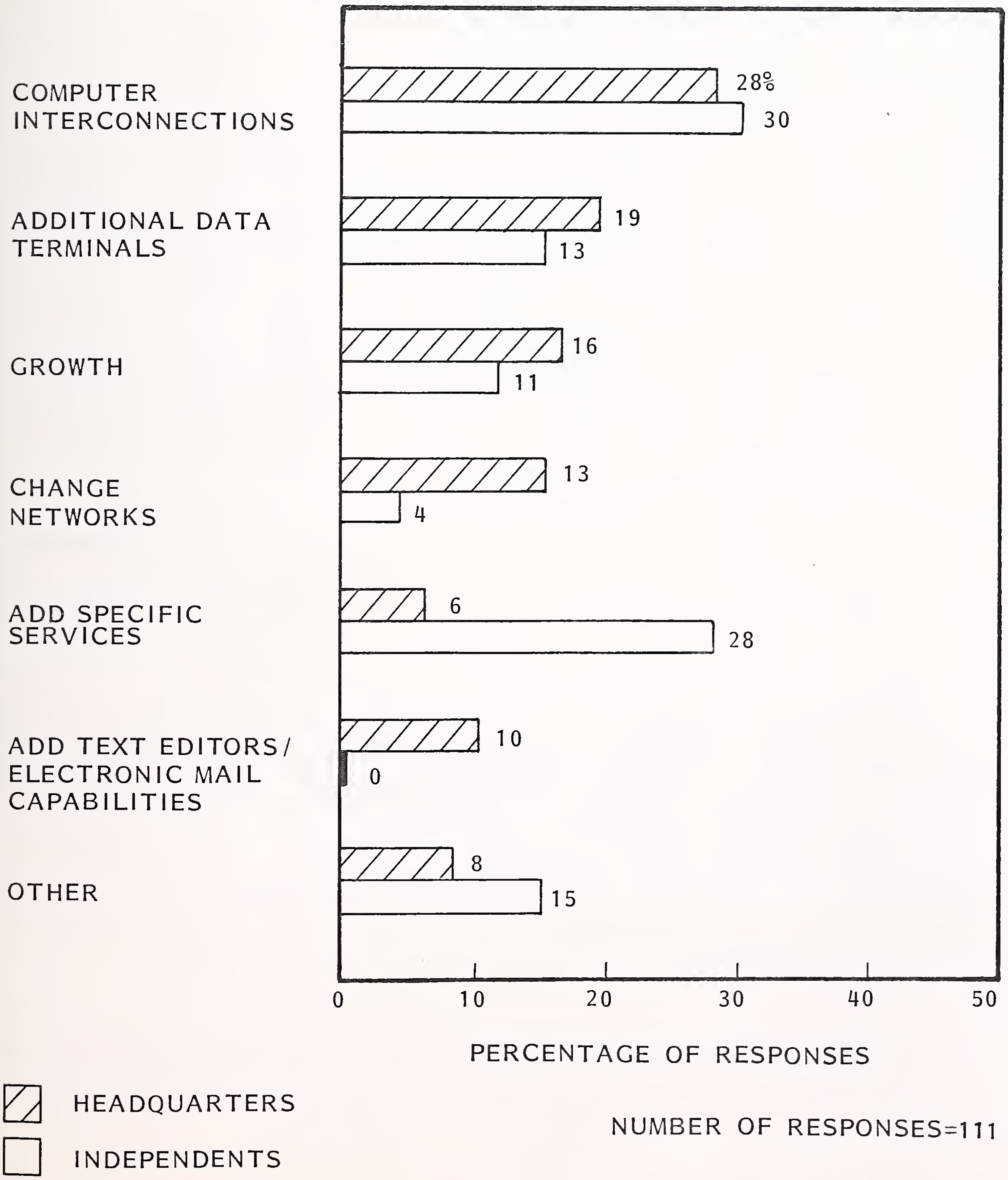
- More illustrative of the things which users would like to be able to do with their message services are the changes which they expect to make, as shown in Exhibit III-20. These are more illustrative because the users no longer feel that they are asking for changes by some other organization, but they are making changes to a system over which they have a great deal of control. They are less inhibited by what they believe to be the limitations of a third party.

- The big change which can be observed between Exhibits III-19 and III-20 is the emphasis on computers and data terminals. Users are apparently converting more of their message applications into a data processing related mode and need the interfaces at the computer end and at the operator end (the data terminal) in order to permit such a conversion. Both headquarters and independents are following this same path.

- Independents plan on adding specific additional message services to those which they already have. These include Telex, Fax, private message systems, etc.

EXHIBIT III-20

CHANGES USERS EXPECT TO BE MAKING IN THEIR COMPANIES' MESSAGE TELECOMMUNICATIONS SYSTEMS



NUMBER OF RESPONSES=111

- The comments about adding text editors or electronic mail are interesting because, of the six headquarters establishments making such comments, only two have any text editors now, and only one of these appears in our list of expecting to use communicating text editors in 1983.

D. KEY DOCUMENTS

I. TYPES OF KEY DOCUMENTS

- In order to better understand the driving forces behind users' requests for services or statements of requirements, we focused on a set of business communication applications which users themselves would define as being important.

  - Users were asked to define those documents which they could characterize as being key to the operations of their business. These are shown in Exhibit III-21 by industry.

  - They were then asked a number of questions about the methods of handling these key documents. The results are shown in Exhibits III-24 through III-27.

- As shown in Exhibit III-21, transactions are by far the most commonly defined key documents and this is true, generally speaking, across most industries. In the financial industries (banking and insurance), documents such as contracts and policies become the key documents.

- Reorganizing this list of key documents into our standardized set of applications brings some interesting results, as shown in Exhibit III-22.

- While transactions remain the most important key documents, in headquarters, reports are a very close second (37% to 39%). Worded differently, trans-

EXHIBIT III-21

TYPES OF KEY DOCUMENTS AS DEFINED BY RESPONDENTS

TYPES OF KEY DOCUMENTS	INDUSTRIES (NUMBER OF MENTIONS)								
	DISCRETE MANUFACTURING	PROCESS MANUFACTURING	TRANSPORTATION	BANKING AND FINANCE	INSURANCE	WHOLESALE	RETAIL	BUSINESS SERVICES	TOTAL
RANSACTIONS									
INVOICES	9	11	7	1	2	11	10	4	55
ORDERS	6	4	1	2	–	3	3	1	20
PURCHASE ORDERS	–	1	1	–	–	1	2	–	5
QUOTES	3	–	–	1	–	1	1	1	7
CLAIMS	–	–	–	–	1	–	–	–	1
CHECKS	–	2	–	1	1	2	2	1	9
BILLS OF LADING	1	–	8	–	–	1	–	1	11
OTHER	–	1	2	–	–	–	–	1	4
ORRESPONDENCE									
EXECUTIVE	1	3	–	–	–	–	–	–	4
DIRECTORS	2		1	1	–	–	–	–	4
OTHER	–	1	1	–	–	–	–	2	4
PORTS									
FINANCIAL	4	1	1	2	–	4	4	4	20
SALES	3	3	3	0	–	4	6	1	20
DAILY OPERATIONS	–	1	–	1	–	–	–	–	2
MONTHLY OPERATIONS	2	1	–	–	–	–	–	–	3
NVENTORY	–	1	–	–	–	–	1	–	2
OTHER	–	4	1	2	–	–	3	4	14
OCUMENTS									
CONTRACTS	2	2	2	12	1	–	–	1	20
DRAWINGS	2	–	–	–	–	–	–	3	5
POLICIES	–	–	–	–	14	–	–	–	14
LEGAL DOCUMENTS	1	3	–	1	–	1	1	1	8
FINANCIAL DOCUMENTS	1	–	–	5	1	1	–	–	8
OTHER	1	–	–	4	–	–	–	4	9
HER									
NTERNAL TRAFFIC	–	–	–	–	1	1	–	–	2
COMPUTER OUTPUT	–	–	–	–	1	–	–	1	2
COMPUTER INPUT	–	–	–	–	–	1	–	–	1
TAL	38	39	28	33	22	31	33	30	254

EXHIBIT III-22

SUMMARY OF KEY DOCUMENT APPLICATIONS

APPLICATION TYPE	PERCENTAGE OF APPLICATION MENTIONS		
	HEAD-QUARTERS	INDEPEN-DENT	TOTAL
TRANSACTIONS-INBOUND	15%	24%	19%
TRANSACTIONS-OUTBOUND	22	45	33
CORRESPONDENCE	6	0	3
ADVERTISING	0	0	0
REPORTS	35	9	24
DOCUMENTS	18	19	18
INSTRUCTIONS	1	1	1
INTRA-COMPANY	3	2	2
TOTAL	100%	100%	100%
TOTAL NUMBER OF MENTIONS	135	119	254

actions represent 37% of key documents in headquarters and 69% of key documents in independents.

- Advertising and instructions are not key, and only special correspondence, such as to/from executives and corporate directors, represent any level of importance. Similarly, the intra-company catch-all loses most of its significance as users get down to cases with key documents.

- Comparing these key documents with the applications of text editors, mail, and message telecommunications, in Exhibit III-23, we see that key documents are in fact a different application pattern than any of these modes.

- Transactions are very key documents but this relates on the outbound side with mail and on the inbound side with message telecommunications.

- Reports are key documents which are similar to text editors except that it is only the complex reports (financial and sales reports) and not the long reports which relate.

- Correspondence is not key, which is unlike any of the message handling modes.

- We will come back to this comparison when we get to Teletex applications.

2. METHODS OF TRANSMITTING KEY DOCUMENTS

- As shown in Exhibit III-24, most (55%) key documents at headquarters are now transmitted by courier and this does not change very much with industry.

- Canada Post handles about 15% of key documents and, except for the insurance industry where policies must be mailed to households, the Canada Post share does not change much with industry.

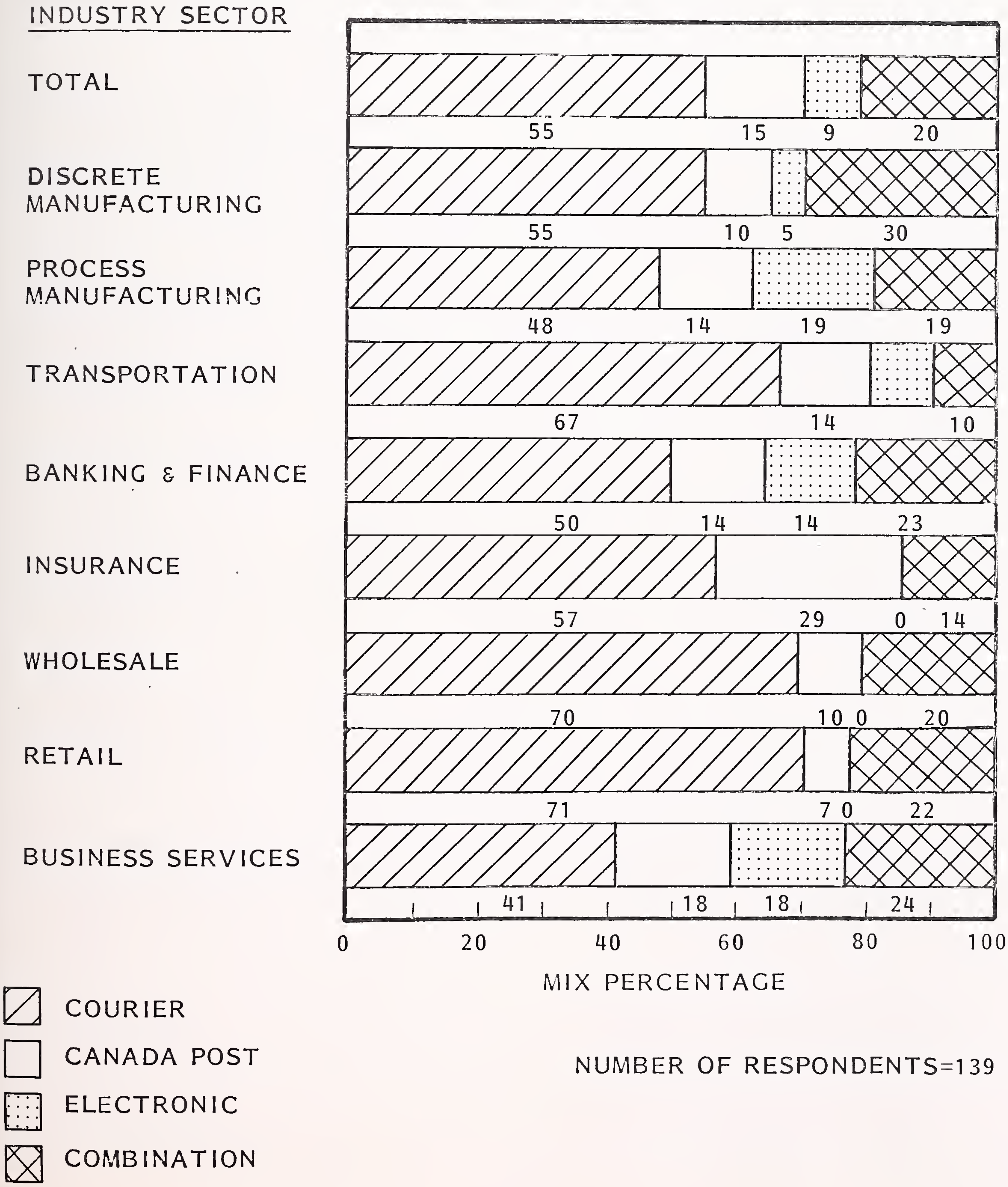
EXHIBIT III-23

COMPARISON OF KEY DOCUMENT APPLICATIONS WITH APPLICATIONS OF EXISTING MODES OF MESSAGE HANDLING

APPLICATION TYPE	PERCENTAGE OF APPLICATION MENTIONS			
	KEY DOCUMENTS	EXISTING MODES OF MESSAGE HANDLING		
		TEXT EDITORS	MAIL	MESSAGE TELECOMMUNICATIONS
TRANSACTIONS-INBOUND	19%	0%	6%	13%
TRANSACTIONS-OUTBOUND	33	5	48	16
CORRESPONDENCE	3	34	25	23
ADVERTISING	0	5	4	2
REPORTS	24	31	8	15
DOCUMENTS	18	23	1	4
INSTRUCTIONS	1	2	3	5
INTRA-COMPANY	2	0	5	23
TOTAL	100%	100%	100%	100%

EXHIBIT III-24

METHODS OF TRANSMITTING KEY DOCUMENTS-HEADQUARTERS



NUMBER OF RESPONDENTS=139

- Electronics as a means of moving key documents handles 9% overall at headquarters. The electronics share varies from 19% in process manufacturing to 0% in insurance and the trade industries.

- Electronics includes primarily Telex and facsimile but other means as well.

- Combination includes mixes of the other three methods. These mixes are usually related to time schedules, geography, accessability, destination audience, and other factors.

- As shown in Exhibit III-25, in independent companies the methods used for transmitting key documents are much the same as at headquarters except that Canada Post plays a larger part, especially in the retail industry where key documents are invoices which must be delivered to households.

- An anomalous situation occurs in the independent insurance industry where electronics handles 8% of the traffic. In insurance headquarters none of the key documents were handled by electronics.

3. URGENCY OF KEY DOCUMENTS

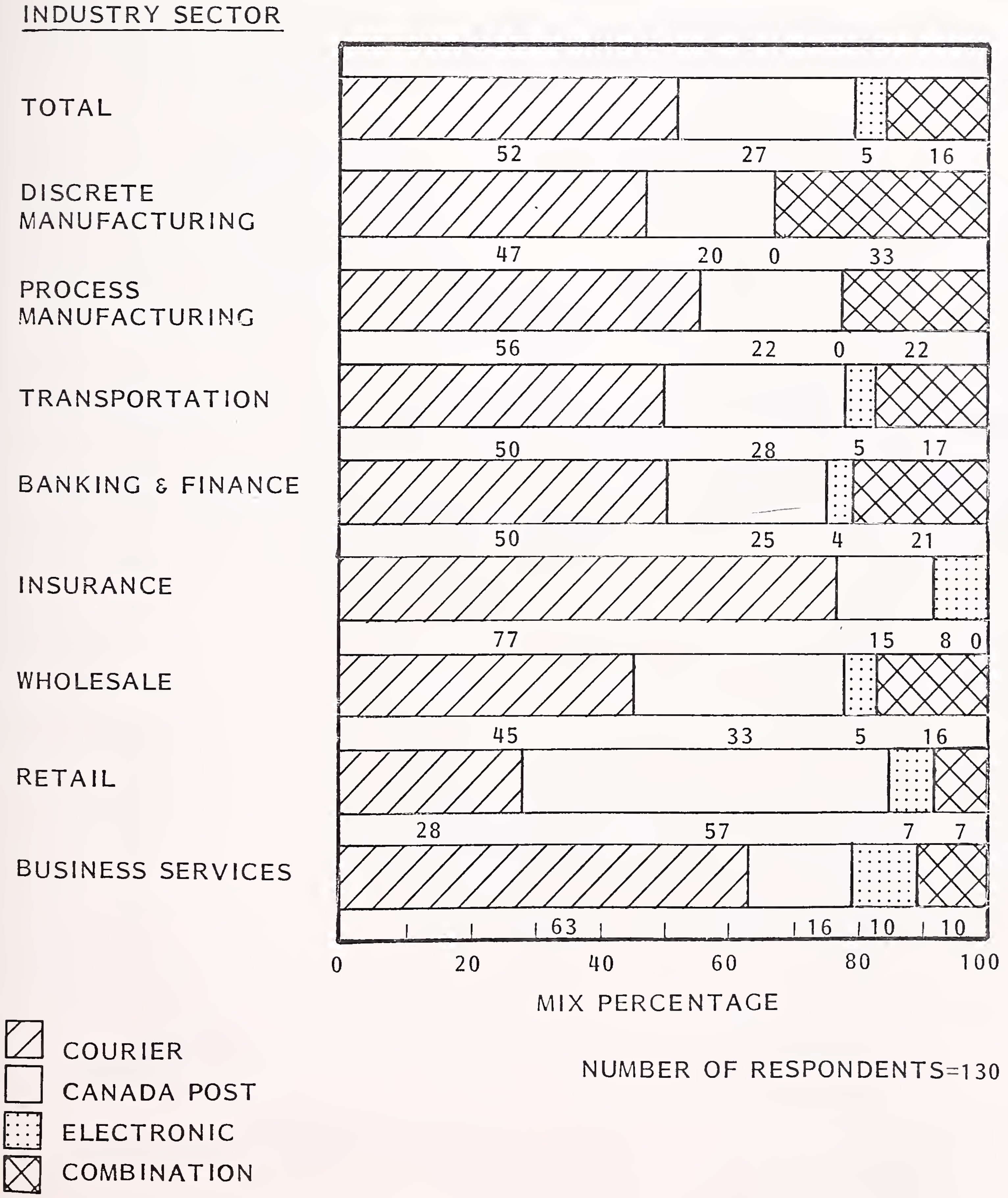
- One of the most important observations in the study is the relatively low level of urgency attributed to key documents by their users, as shown in Exhibit III-26.

- Only 3% of the key documents of independent companies need to be delivered within one hour and only 5% for headquarters.

- Only 7-12% of key documents must be there the same day and from 14-23% for independents or headquarters respectively must be delivered overnight.

EXHIBIT III-25

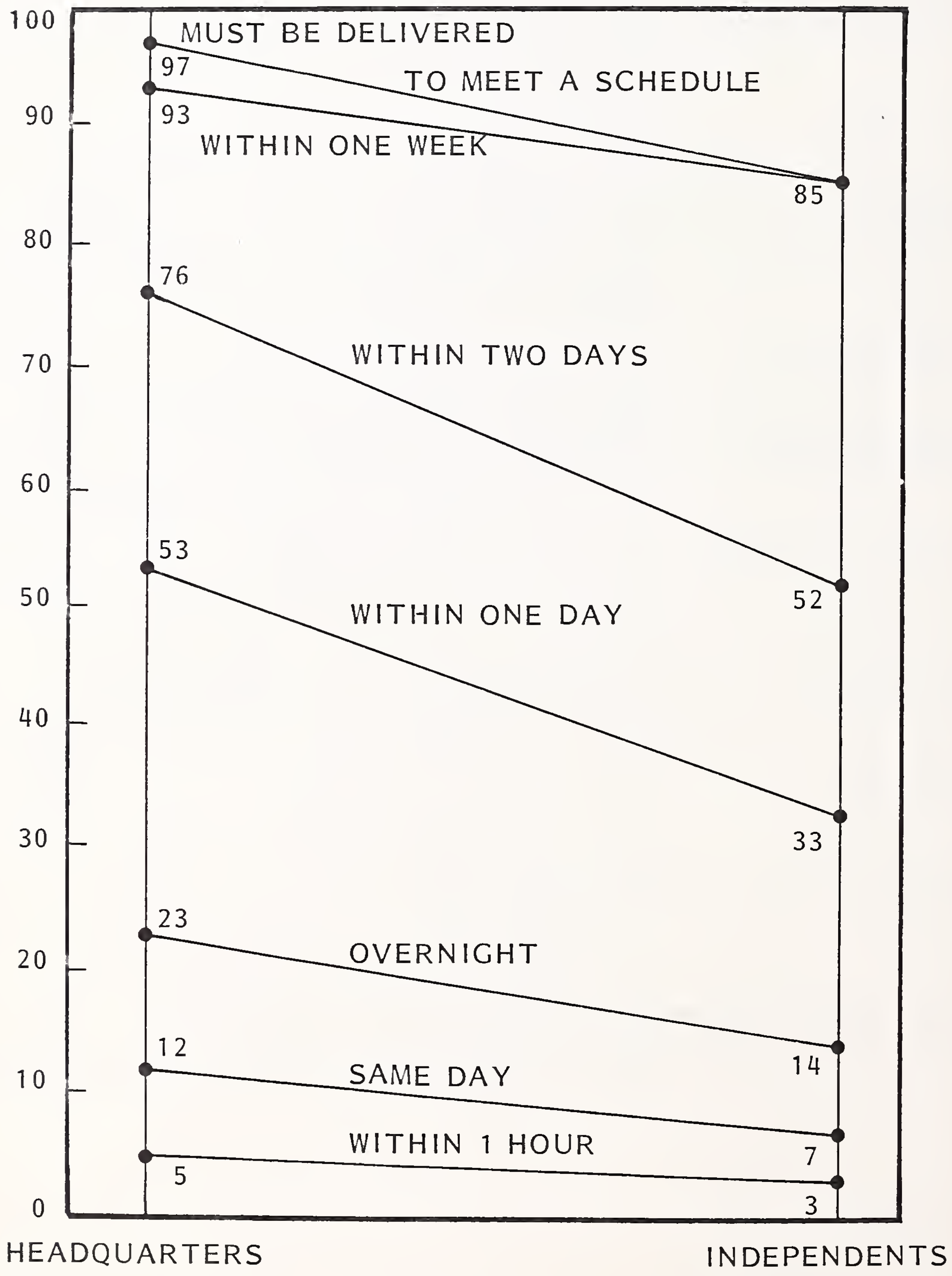
METHODS OF TRANSMITTING KEY DOCUMENTS-INDEPENDENTS



NUMBER OF RESPONDENTS=130

EXHIBIT III-26

DELIVERY URGENCY OF KEY DOCUMENTS



NUMBER OF RESPONDENTS=254

- What this says is that a service with the capability of delivering key documents reliably by the next morning could handle between 77% and 86% of those key documents based upon their level of urgency. (Note this is one minus the percentage shown in Exhibit III-26.)

- While this seems to conflict with the statements about Canada Post made earlier, a closer examination of the chart shows that about two-thirds of the key documents (76% for headquarters, 52% for independents) need to be delivered within two days and Canada Post cannot make reliable deliveries on that schedule.

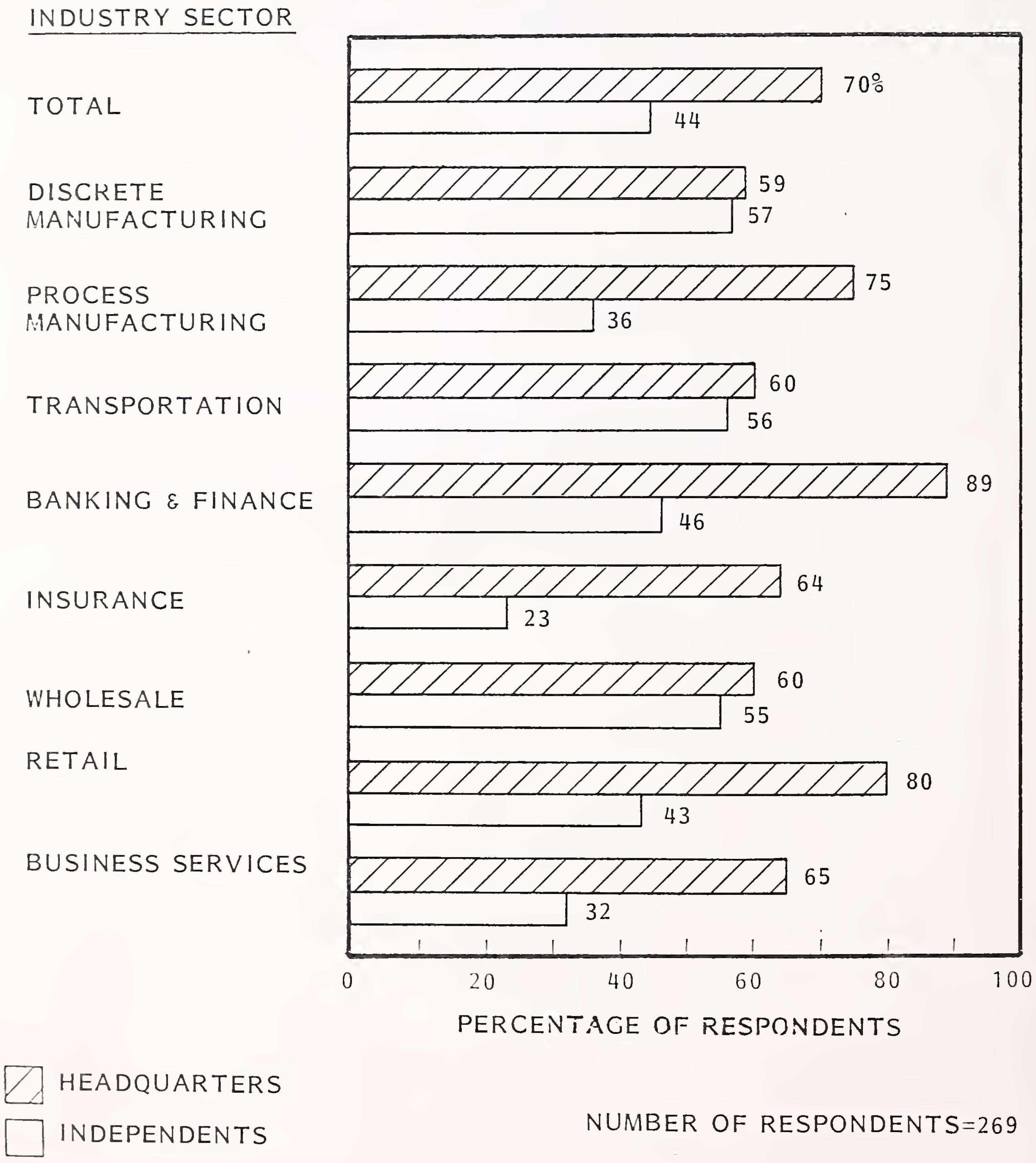
4. KEY DOCUMENTS WHICH COULD BE TRANSMITTED VIA ELECTRONICS

- As seen in Exhibits III-24 and III-25, some 10% of key documents are now handled by electronic transmission.

- Users were asked if their key documents could be transmitted electronically. Including as "yes" those respondents who said "possibly" or "some could" we see in Exhibit II-27 that about two-thirds of the respondents said that their key documents could be transmitted electronically and, with the exception of that anamalous independent insurance sector, there is little industry variation.

EXHIBIT III-27

COMPANIES WHICH BELIEVE THAT THEY COULD SEND AT LEAST SOME KEY DOCUMENTS VIA ELECTRONIC MEANS



E. TELETEX

1. POTENTIAL USERS

- Teletex was described to the users as follows:

  "There is a communications service concept being developed, primarily in Europe, called Teletex. Teletex is a medium speed switched network service intended to allow communicating word processors to transmit messages to each other. It will also be able to communicate directly with the worldwide network of Telex terminals."

  Users were then asked if such a service would be useful to their company. The results are shown in Exhibit III-28.

- About 43% of the users said that it would or possibly would be useful to their companies.

- The distribution of positive responses by industry and by organization (headquarters or independents) correlates very closely with the use of Telex, as shown in Exhibit III-16.

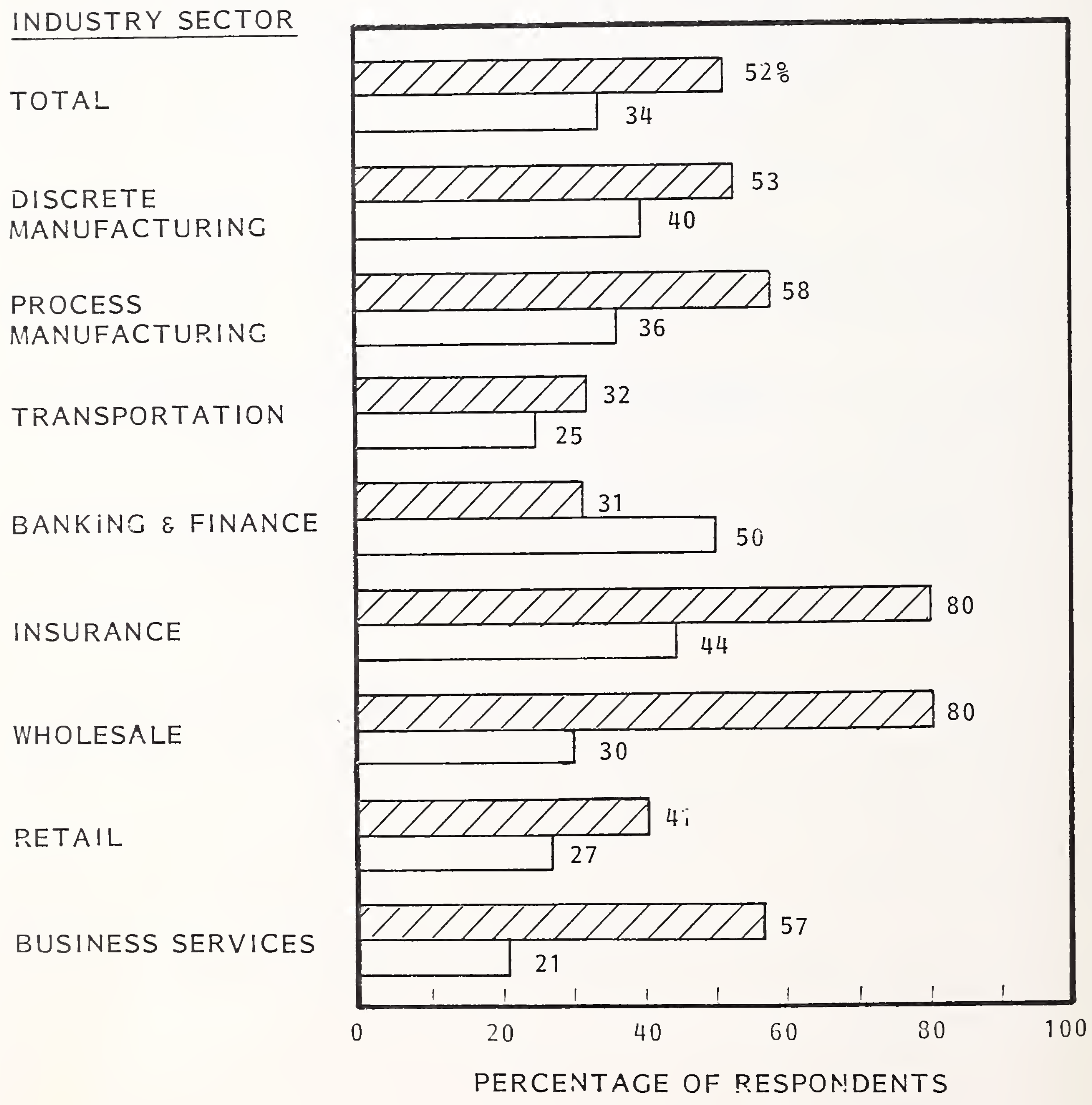
- This could lead directly to the conclusion that the users envision Teletex as a high speed Telex service. Before we jump to that conclusion we will examine some of the other Teletex data.

2. TELETEX USE

- The reasons respondents gave for their potential use of Teletex are shown in Exhibit III-29.

EXHIBIT III-28

COMPANIES WHICH BELIEVE THAT TELETEX COULD BE BENEFICIAL TO THEM*



▨ HEADQUARTERS

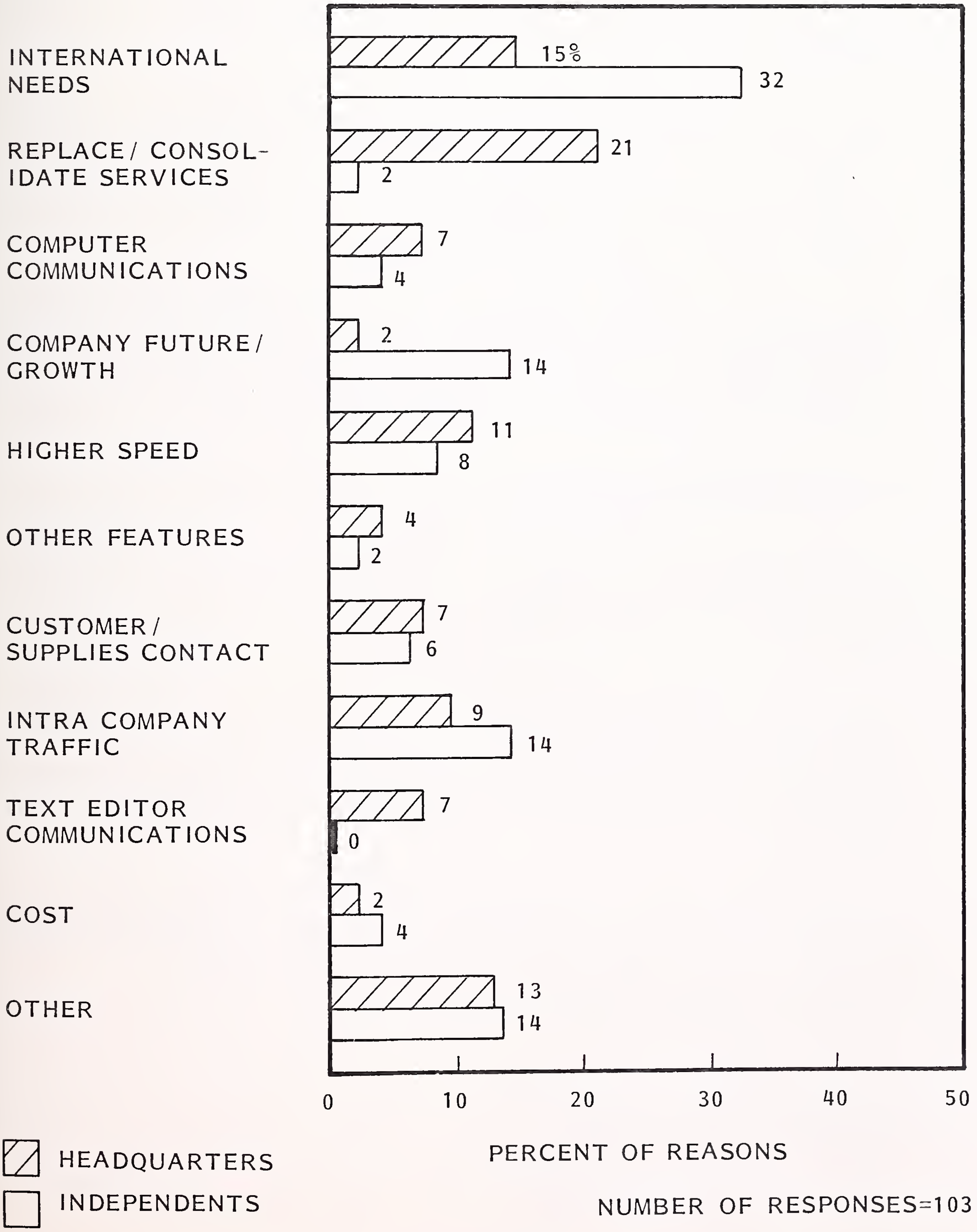
☐ INDEPENDENTS

*INCLUDES "POSSIBLY", "SOUNDS GOOD", ETC. AS WELL AS "YES".

NUMBER OF RESPONDENTS=287

EXHIBIT III-29

REASONS FOR USING TELETEX



NUMBER OF RESPONSES=103

- Independent companies were strong on its ability to address their international message needs (32%) and its ability to allow for their companies growth and future plans (14%).

- Headquarters establishments saw Teletex mainly as a means of replacing and/or consolidating their existing message services into one lower overall cost service (21%).

- Higher speed, while mentioned (8% and 11%), was not an often given reason.

- Neither was computer interfacing, although it was higher for headquarters (7%) than it was for independents (4%).

- Communications between text editors was mentioned by 7% of the headquarters respondents. These four companies had specific applications in mind for which a communicating text editor would work very well.

- The reasons respondents gave for not using Teletex are shown in Exhibit III-30.

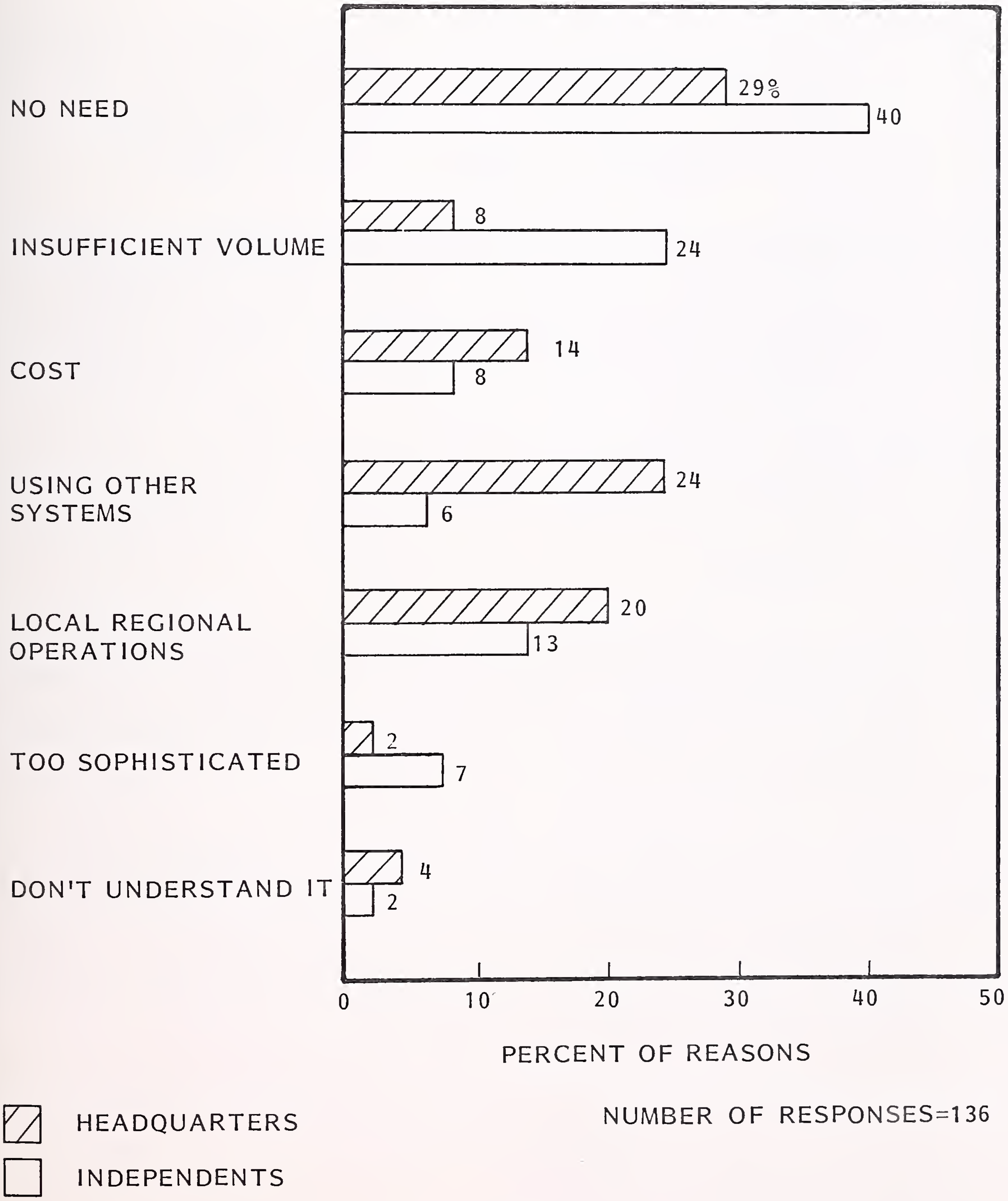
- The reasons given by independents for not using Teletex are very similar to those given by these same respondents for not using text editors, as shown in Exhibit III-10.

- Headquarters, on the other hand, while similar to the text editor reasons in most instances, had one important new reason; that is, the heavy use of other systems (24%). These other systems were usually private message networks or data systems.

- In both headquarters and independents, the factor of their own limited geography was a big reason for not using Teletex (20% and 13%).

EXHIBIT III-30

REASONS FOR NOT USING TELETEX



3. TELETEX APPLICATIONS

- Respondents anticipated uses of Teletex were placed into the standardized set of applications, as shown in Exhibit III-31.

- In general, the applications pattern looks almost identical to that of message telecommunications with three key exceptions.

  - Inbound transactions are lower in Teletex (2% versus 13%). Our hypothesis is that the respondents assume that most of their customers will not be on the Teletex network until it gets to a larger size.

  - Reports are higher for headquarters establishments on Teletex (35% versus 18%). This is probably due to the higher speed capability of Teletex being able to handle long reports. It may also be because the communicating text editors on Teletex will be able to handle the complex reports.

  - Documents are higher for independents on Teletex. As we shall see later, this is attributable to that anomalous independent insurance sector again.

- A chart comparing Teletex applications to the same set for key documents and for existing message handling modes is shown in Exhibit III-32. This points up even more clearly the similarity between Teletex and message communications applications.

4. TELETEX PRODUCT FEATURES

- Eleven potential product features of Teletex were described to the respondents (10 features in the on-site surveys). The respondents were asked three separate sets of questions about these features:

EXHIBIT III-31

RESPONDENTS' ANTICIPATED USES OF TELETEX - BY APPLICATION

APPLICATION TYPE	PERCENTAGE OF APPLICATION MENTIONS		
	HEAD-QUARTERS	INDEPEN-DENT	TOTAL
TRANSACTIONS-INBOUND	5%	0%	2%
TRANSACTIONS-OUTBOUND	15	16	16
CORRESPONDENCE	25	25	25
ADVERTISING	0	0	0
REPORTS	35	13	23
DOCUMENTS	5	16	11
INSTRUCTIONS	0	0	0
INTRA-COMPANY	15	30	23
TOTAL	100%	100%	100%
TOTAL NUMBER OF MENTIONS	20	24	44

EXHIBIT III-32

COMPARISON OF USERS' ANTICIPATED USES OF TELETEX WITH APPLICATION OF EXISTING MESSAGE HANDLING MODES AND DOCUMENT TYPES

APPLICATION TYPE	PERCENTAGE OF APPLICATION MENTIONS				
	USES OF TELETEX	EXISTING HANDLING MODES AND DOCUMENT TYPES			
		KEY DOCUMENTS	TEXT EDITORS	MAIL	MESSAGE TELECOMM-UNICATIONS
TRANSACTIONS-INBOUND	2%	19%	0%	6%	13%
TRANSACTIONS-OUTBOUND	16	33	5	48	16
CORRESPONDENCE	25	3	34	25	23
ADVERTISING	0	0	5	4	2
REPORTS	23	24	31	8	15
DOCUMENTS	11	18	23	1	4
INSTRUCTIONS	0	1	2	3	5
INTRA-COMPANY	23	2	0	5	22
TOTAL	100%	100%	100%	100%	100%

- First, they were asked to place an importance weight on each of the features. The results of these questions are shown in Exhibits III-33 through III-37.

- Next, they were asked to select the one of the eleven which was "most important" to them. These results are shown in Exhibit III-38.

- Finally, they were asked to evaluate what they would be willing to pay for this "most important" feature. These results are in Exhibit III-39.

- In the importance weighting of the individual product features, the four possible answers (very important, somewhat important, unimportant, and undesirable) were given weights of +2, +1, -1, and -2, respectively. The responses for all users in an industry/organization sector were summed algebraically. The results for headquarters establishments are in Exhibit III-33, and for independents, in Exhibit III-34.

- Examining Exhibit III-33, we can see that the heaviest weighted feature for headquarters users was compatibility with computer communication protocols. The overall weight of this feature for all industries was 125. Process manufacturing, the financial industries, and business services gave this feature the most weight.

- Confirmation of delivery was also weighted high but by a largely different set of industries.

- The text editor-like features of the network (pre-stored message texts and message composition and editing in the network) were weighted as unimportant by most industries.

- The total weight by industry (bottom row in Exhibit III-33) is a sort of "level of enthusiasm" for the set of features and possibly an indicator of the entire Teletex service. Process manufacturing, banking, and business services were high on the features while retailing was low.

EXHIBIT III-33

IMPORTANCE WEIGHT OF TELETEX PRODUCT FEATURES - HEADQUARTERS

PRODUCT FEATURES	INDUSTRIES								
	DISCRETE MANUFACTURING	PROCESS MANUFACTURING	TRANSPORTATION	BANKING AND FINANCE	INSURANCE	WHOLESALE	RETAIL	BUSINESS SERVICES	TOTAL
CONNECTION TO EXISTING MESSAGE SERVICES	8	22	14	4	9	12	8	10	87
CONVERSATIONAL CONNECTION	-2	-10	6	6	10	11	5	13	39
COMPUTER COMPATIBILITY	6	23	16	23	21	11	5	20	125
TERMINALS PROVIDED WITH THE SERVICE	14	15	15	10	17	8	10	12	101
MULTIPLE ADDRESS	10	13	12	8	9	8	14	12	86
STORED ADDRESS LISTS	1	12	6	19	6	10	6	17	77
MESSAGE COMPOSITION & EDITING IN NETWORK	4	8	4	11	1	3	7	6	44
PRE STORED MESSAGE TEXTS	-4	14	-1	8	1	-1	-6	6	17
CONFIRMATION OF DELIVERY	20	15	22	16	8	12	12	19	124
OFFICE QUALITY PRINTING	14	9	7	14	12	12	11	16	95
CALL ACCOUNTING REPORTS	16	3	18	6	12	9	8	1	73
TOTAL BY INDUSTRY	87	124	119	125	106	95	80	132	868

VERY IMPORTANT = +2
IMPORTANT = +1
UNIMPORTANT = -1
UNDESIRABLE = -2

EACH RESPONDENT SCORED EACH FEATURE AND THE FEATURE SCORES WERE ALGEBRAICALLY SUMMED BY INDUSTRY.

EXHIBIT III-34

IMPORTANCE WEIGHT OF TELETEX PRODUCT FEATURES - INDEPENDENTS

PRODUCT FEATURES	INDUSTRIES								
	DISCRETE MANUFAC-TURING	PROCESS MANUFAC-TURING	TRANSPOR-TATION	BANKING AND FINANCE	INSURANCE	WHOLE-SALE	RETAIL	BUSINESS SERVICES	TOTAL
CONNECTION TO EXISTING MESSAGE SERVICES	11	12	14	20	13	20	11	7	108
CONVERSATIONAL CONNECTION	10	5	15	14	8	18	6	13	89
COMPUTER COMPATIBILITY	7	12	4	2	7	17	-5	15	59
TERMINALS PROVIDED WITH THE SERVICE	5	12	19	20	16	21	9	22	124
MULTIPLE ADDRESS	7	7	12	16	13	21	2	1	79
STORED ADDRESS LISTS	9	13	8	26	17	22	0	6	101
MESSAGE COMPOSITION & EDITING IN NETWORK	-2	7	-4	12	-3	17	-3	8	32
PRE STORED MESSAGE TEXTS	-5	2	-4	5	2	8	-5	-8	-5
CONFIRMATION OF DELIVERY	17	4	12	25	17	26	4	18	123
OFFICE QUALITY PRINTING	5	12	0	21	17	18	-3	15	85
CALL ACCOUNTING REPORTS	20	10	5	11	6	19	-2	6	75
TOTAL BY INDUSTRY	84	96	81	172	113	207	14	103	870

VERY IMPORTANT = +2
IMPORTANT = +1
UNIMPORTANT = -1
UNDESIRABLE = -2

EACH RESPONDENT SCORED EACH FEATURE AND THE FEATURE SCORES WERE ALGEBRAICALLY SUMMED BY INDUSTRY.

EXHIBIT III-35

IMPORTANCE WEIGHT OF TELETEX PRODUCT FEATURES - COMPARISON OF HEADQUARTERS AND INDEPENDENTS

FEATURE	HEAD-QUARTERS	INDEPEN-DENTS	TOTAL
CONNECTION TO EXISTING MESSAGE SERVICES	87	108	195
CONVERSATIONAL CONNECTION	39	89	128
COMPUTER COMPATIBILITY	125	59	184
TERMINALS PROVIDED WITH THE SERVICE	101	124	225
MULTIPLE ADDRESS	86	79	165
STORED ADDRESS LISTS	77	101	178
MESSAGE COMPOSITION AND EDITING IN THE NETWORK	44	32	76
PRESTORED MESSAGE TEXTS	17	5	19
CONFIRMATION OF DELIVERY	124	123	247
OFFICE QUALITY PRINTING	95	85	180
CALL ACCOUNTING REPORTS	73	75	148
TOTAL	868	870	1,738

EXHIBIT III-36

IMPORTANCE RANKING OF TELETEX PRODUCT FEATURES - HEADQUARTERS

PRODUCT FEATURES	INDUSTRIES (NUMBER OF MENTIONS)								
	DISCRETE MANUFACTURING	PROCESS MANUFACTURING	TRANSPORTATION	BANKING AND FINANCE	INSURANCE	WHOLESALE	RETAIL	BUSINESS SERVICES	TOTAL
CONNECTION TO EXISTING MESSAGE SERVICES	6	2	5	11	6	3	6	8	5
CONVERSATIONAL CONNECTION	10	11	8	9	5	5	10	5	10
COMPUTER COMPATIBILITY	7	1	3	1	1	4	9	1	1
TERMINALS PROVIDED WITH THE SERVICE	4	3	4	6	2	9	4	7	3
MULTIPLE ADDRESS	5	6	6	7	7	8	1	6	6
STORED ADDRESS LISTS	9	7	9	2	9	6	8	3	7
MESSAGE COMPOSITION & EDITING IN NETWORK	8	9	10	5	10	10	7	10	9
PRESTORED MESSAGE TEXTS	11	5	11	8	11	11	11	9	11
CONFIRMATION OF DELIVERY	1	4	1	3	8	2	2	2	2
OFFICE QUALITY PRINTING	3	8	7	4	3	1	3	4	4
CALL ACCOUNTING REPORTS	2	10	2	10	4	7	5	11	8

MOST IMPORTANT FEATURE WITHIN EACH INDUSTRY = 1
LEAST IMPORTANT FEATURE WITHIN EACH INDUSTRY = 11

EXHIBIT III-37

IMPORTANCE RANKING OF TELETEX PRODUCT FEATURES - INDEPENDENTS

PRODUCT FEATURES	INDUSTRIES (NUMBER OF MENTIONS)								
	DISCRETE MANUFACTURING	PROCESS MANUFACTURING	TRANSPORTATION	BANKING AND FINANCE	INSURANCE	WHOLESALE	RETAIL	BUSINESS SERVICES	TOTAL
CONNECTION TO EXISTING MESSAGE SERVICES	3	4	3	6	5	5	1	7	3
CONVERSATIONAL CONNECTION	4	9	2	8	7	8	3	5	5
COMPUTER COMPATIBILITY	6	3	8	3	8	10	10	3	9
TERMINALS PROVIDED WITH THE SERVICE	8	2	1	5	4	4	2	1	1
MULTIPLE ADDRESS	7	8	4	7	6	3	5	10	7
STORED ADDRESS LISTS	5	1	6	1	1	2	6	8	4
MESSAGE COMPOSITION & EDITING IN NETWORK	10	7	10	9	11	9	8	6	10
PRE STORED MESSAGE TEXTS	11	11	11	11	10	11	11	11	11
CONFIRMATION OF DELIVERY	2	10	5	2	2	1	4	2	2
OFFICE QUALITY PRINTING	9	5	9	4	3	7	9	4	6
CALL ACCOUNTING REPORTS	1	6	7	10	9	6	7	9	8

MOST IMPORTANT FEATURE WITHIN EACH INDUSTRY = 1
LEAST IMPORTANT FEATURE WITHIN EACH INDUSTRY = 11

EXHIBIT III-38

MOST IMPORTANT TELETEX PRODUCT FEATURES

PRODUCT FEATURES	HEAD-QUARTERS		INDEPEN-DENTS		OVERALL	
	NUMBER OF MEN-TIONS	RANK	NUMBER OF MEN-TIONS	RANK	NUMBER OF MEN-TIONS	RANK
CONNECTION TO EXISTING MESSAGE SERVICES	16	2	26	1	42	2
CONVERSATIONAL CONNECTION	7	3	12	3	19	3
COMPUTER COMPATIBILITY	31	1	25	2	56	1
TERMINALS PROVIDED WITH THE SERVICE	6	5	7	6	13	5
MULTIPLE ADDRESS	4	7	12	3	16	4
STORED ADDRESS LISTS	3	10	5	9	8	10
MESSAGE COMPOSITION IN THE NETWORK	3	10	10	5	13	5
PRESTORED MESSAGE TEXTS	4	7	7	6	11	8
CONFIRMATION OF DELIVERY	8	4	3	10	11	8
OFFICE QUALITY PRINTING	6	5	7	6	13	5
CALL ACCOUNTING REPORTS	4	7	2	11	6	11

NUMBER OF RESPONDENTS=207

EXHIBIT III-39

RESPONDENTS WILLINGNESS TO PAY MORE FOR THEIR MOST IMPORTANT FEATURE

AVERAGE PERCENTAGE PREMIUM

PRODUCT FEATURES	PERCENTAGE OF RESPONDENTS WILLING TO PAY MORE			PERCENT PREMIUM WILLING TO PAY
	HEAD-QUARTERS	INDEPEN-DENTS	TOTAL	
CONNECTION TO EXISTING MSG. SERVICES	85%	45%	60%	9%
CONVERSATIONAL CONNECTION	84	60	69	20
COMPUTER COMPATIBILITY	75	91	83	25
TERMINALS PROVIDED WITH THE SERVICE	50	75	56	-
MULTIPLE ADDRESS	100	22	42	8
STORED ADDRESS LISTS	0	100	67	-
MESSAGE COMPOSITION IN THE NETWORK	100	50	80	5
PRESTORED MESSAGE TEXTS	100	100	100	-
CONFIRMATION OF DELIVERY	80	91	88	8
OFFICE QUALITY PRINTING	84	67	75	12
CALL ACCOUNTING REPORTS	75	57	64	5
TOTAL	78%	67%	71%	15%

- Moving to the weightings by independent companies in Exhibit III-34, we see a quite different pattern.

- Terminals provided as an integral part of the service were the heaviest weighted feature (124) while computer compatibility dropped sharply to a weight of 59.

- The text editor-like features are still the lowest weighted.

- In terms of industry "level of enthusiasm," independent wholesalers and bankers are very high on the features while independent retailers were even lower than retail headquarters.

- Exhibit III-35 compares the important weights given to the product features by the headquarters respondents to those weights given by the independents. We see that the independents give more weight to the message service features, such as terminals, delivery confirmation, connection to existing services, stored address lists and conversational connections. Headquarters establishments, while also giving heavy weight to these message features, put computer compatibility first and office quality printing is also high.

- Taken as a whole, the message services related features are the most dominant features.

- The text editor-like features are the lowest of both groups.

- In Exhibits III-36 and III-37, these weights of importance are placed in rank order for each industry and for the total of headquarters and independents.

- When users were asked to select the single most important product feature, the pattern changes somewhat. In Exhibit III-38, the frequency of mentions and the ranking is shown for headquarters, independents, and total.

  - The basic service elements, such as computer compatibility, connection to existing message services, and conversation connections, scored more "most importants."

  - The added features or "niceties," such as call accounting reports and stored address lists, scored fewer "most importants."

- Of greater consequence is that every single product feature, regardless of how low it was weighted or ranked, was considered by some number of respondents as the most important product feature to them.

5. VALUE OF TELETEX PRODUCT FEATURES

- In Exhibit III-39, is shown the willingness of respondents to pay more for product features over and above the basic service cost and the amount of any such premium. A note of caution on this exhibit. While most of the respondents who selected a "most important" product feature (the 208 respondents from Exhibit III-38) did answer this question, some of the data cells are quite small. Only 27 respondents answered the question quantitatively so that the last column, the percent premium users are willing to pay, should only be considered as an indication.

- Generally speaking, most users (71%) are willing to pay more for the features listed.

- Computer compatibility, in particular, is a valuable feature to many users and they are willing to pay a substantial premium (25%) for such a capability.

IV VENDOR SURVEY

IV VENDOR SURVEY

A. TEXT EDITOR MARKET ESTIMATES

- Vendors of text editing equipment and services were surveyed in order to define their perceptions of and probable impact on the market for communicating text editor functions.

- With a few key exceptions, most of the vendors are subsidiaries of American companies and their products are produced wholly or in part in the United States. Many of them have only recently begun marketing operations in Canada.

- Their major perception of the Canadian text editor market is that it is two to three years behind the U.S. in terms of market penetration, user awareness, applications implemented, units of equipment per installation, etc.

- Vendors' estimates of the size of the total Canadian text editor market are very consistent with each other. The total installed base is estimated to be about 25,000 units of which some 60% are first generation equipment such as the IBM MC/ST and the remaining 40% are newer devices.

- The vendors were also very uniform in their estimate of the rapid growth of the installed base. The increase will be about 10,000 units per year due to shipments. This rapid growth rate has apparently started only within the past year.

- Given these market size and growth estimates, and comparing this with the estimates made in the INPUT Model of Canadian business communications, it would appear that the time lag between Canada and the U.S. in the text editor market is more like one year rather than two or three years.

B. COMMUNICATING TEXT EDITOR APPLICATIONS

- Communications using text editors is an occasional thing representing no more than 1,000 units at present, but also growing rapidly. Some vendors estimate that communications capability is included on about 20% of new text editor installations, but this is on the high side and there is much less uniformity of opinion on this point.

- The applications for which communicating text editors are used tend to be very specialized at this point in their market development. The primary applications consist of:

  - Transferring prepared copy to a typesetting system or service.

  - Accessing a computerized data base, such as an address file, a contract file, or a legal reference file.

- Basic communications applications, such as headquarters to branch, are not yet implemented in any significant numbers. Part of the reason for this is that the vendors of word processing equipment have established a limited number of sales and service locations and their installations are limited to the nearby customers. As the vendors open up sales offices in additional Canadian cities, they will be selling more and more multi-location systems with communications capabilities.

- As in the United States, communications capabilities on a word processing device is very much a vendor-developed application. The usual sales process is to place word processors in offices with the initial emphasis being on their power typing capability. After these units are in and operating, the advantages of communication between word processors is promoted in order to sell additional machines at additional locations.

- The communications mode for these word processors is today a manually controlled connection through the telephone network. Some of the users have requested Telex and TWX access for their communications mode, but this is not available today.

- Connection to a computer system is another frequent request to the word processor vendors. These are for the specialized applications such as typesetting and data base access mentioned earlier.

C. TEXT EDITING ALTERNATIVES

- Functional competition to word processing devices from computer-based systems such as the IBM ATMS or SCRIPT have had little visible impact on the word processor equipment sales. Most of these applications are restricted to program documentation and engineering specifications. User interviews tend to confirm this evaluation.

- Similarly, facsimile has had little competitive impact, primarily because the marketing thrust of the word processing vendors has been in the power typing area, not message communications.

- New "electronic mail" services and systems represent a potential competitive threat to Teletex. Experimental installations (in Canada) using such systems (COMET from Computer Corporation of America and POSTMAN from ComShare) are generating much enthusiasm from their users.

D. TEXT EDITOR MARKETING

- In focusing their marketing efforts, the word processing equipment vendors have concentrated on the high potential industries in addition to the geographic concentration noted earlier. The industries which, by general agreement, are the most addressable are insurance, legal, government, and other professionals (architects, consultants, etc.). The vendors commonly feel that manufacturing companies represent a more difficult sale and therefore a market which will be addressed later.

- The size of the user company is a less important criterion than the industry in their evaluation of market segments.

V A MODEL OF THE CANADIAN BUSINESS COMMUNICATIONS MARKET

V A MODEL OF THE CANADIAN BUSINESS COMMUNICATIONS MARKET

A. PURPOSE

- A theoretical model of Canadian business communications was developed using Canadian employment demographics and American business communications patterns. The purpose of this theoretical model or paper analysis is to establish a basic structure of the Canadian business communications markets which can later be modified, supplemented, and corrected by field research and other direct Canadian market data.

- This working structure of the Canadian business communications market is used in a number of ways in the research program on text editing typewriter communications.

  - To point out key similarities and differences between the Canadian and U.S. markets.

  - To point out significant areas of unknown or conflicting data for focused field research.

  - To establish a preliminary measure of the interchangeability or cross-elasticity between different forms of business communications.

- To develop a relationship between specific segments of the Canadian and U.S. business communications markets in order to apply U.S. historic and forecasted growth rates to those segments, particularly that of communicating word processors.

B. METHODOLOGY

- The methodology used to develop the model was as follows:
  - Establish a list of key business communications equipment and types of messages, as shown in Exhibit V-1.
  - Establish the U.S. base of installed equipment and annual message volumes for each item, as shown in Exhibit V-2.
  - Distribute these quantities by industry, using prior INPUT studies where available, as shown in Exhibit V-3 and V-4.
  - Divide these quantities by the employment figures for each industry, establishing the number of units of equipment installed per employee and the volumes of messages sent annually per employee for each industry, as shown in Exhibits V-5 and V-6. (Note: INPUT's experience "per employee" figures are the most stable and convenient to use.)
  - Multiply these "per employee" ratios by the numbers of employees in each of these same industries in Canada establishing a theoretical number of units of equipment installed and a volume of annual messages for each industry in Canada, as shown in Exhibits V-7 and V-8.
  - Add the total equipment installed and message volumes for each industry in Canada to establish a theoretical market base for the total Canadian market, as shown in Exhibit V-9.

EXHIBIT V-1

KEY COMPONENTS OF BUSINESS COMMUNICATIONS - TYPES OF EQUIPMENT AND MESSAGES

- TYPES OF EQUIPMENT
  - BUSINESS TELEPHONES
  - OFFICE TYPEWRITERS
  - WORD PROCESSORS
  - GENERAL PURPOSE COMPUTERS
  - SMALL BUSINESS COMPUTERS
  - DATA TERMINALS WITH COMMUNICATIONS
  - TELEX/TWX TERMINALS
  - OTHER MESSAGE SYSTEM TERMINALS
  - FACSIMILE TERMINALS
  - COMMUNICATING WORD PROCESSORS
- TYPES OF MESSAGES
  - BUSINESS TELEPHONE CALLS
  - PIECES OF FIRST CLASS MAIL
  - PIECES OF COURIER MAIL
  - DATA COMMUNICATION MESSAGES
  - TELEX/TWX MESSAGES
  - OTHER MESSAGE SYSTEM MESSAGES
  - MESSAGE SERVICE MESSAGES
  - FACSIMILE MESSAGES
  - COMMUNICATING WORD PROCESSOR MESSAGES

EXHIBIT V-2

BUSINESS COMMUNICATION COMPONENTS - UNITED STATES, 1978 - TYPES OF EQUIPMENT AND MESSAGES

• TYPES OF EQUIPMENT (IN THOUSANDS)	
- BUSINESS TELEPHONES	40,689.0
- OFFICE TYPEWRITERS	5,000.0
- WORD PROCESSORS	350.0
- GENERAL PURPOSE COMPUTERS	59.7
- SMALL BUSINESS COMPUTERS	73.4
- DATA TERMINALS WITH COMMUNICATIONS	500.0
- TELEX/TWX TERMINALS	134.0
- OTHER MESSAGE SYSTEM TERMINALS	200.0
- FACSIMILE TERMINALS	190.0
- COMMUNICATING WORD PROCESSORS	20.0
TOTAL	47,216.0*
• TYPES OF MESSAGES (IN MILLIONS ANNUALLY)	
- BUSINESS TELEPHONE CALLS	134,900.0
- PIECES OF FIRST CLASS MAIL	29,470.0
- PIECES OF COURIER MAIL	-
- DATA COMMUNICATION MESSAGES	3,975.0
- TELEX/TWX MESSAGES	167.5
- OTHER MESSAGE SYSTEM MESSAGES	500.0
- MESSAGE SERVICE MESSAGES	67.0
- FACSIMILE MESSAGES	356.0
- COMMUNICATING WORD PROCESSOR MESSAGES	5.0
TOTAL	169,440.0*

*MAY NOT EQUAL TOTAL DUE TO ROUNDING

EXHIBIT V-3

BUSINESS COMMUNICATIONS GENERATING EQUIPMENT - UNITED STATES - UNITS INSTALLED, 1978

INDUSTRY / TYPES OF MESSAGES	DISCRETE MANUFAC-TURING	PROCESS MANUFAC-TURING	TRANSPOR-TATION	BANKING AND FINANCE	INSURANCE	BUSINESS SERVICES	RETAIL	WHOLE-SALE	OTHER	TOTAL
TELEPHONES	3,156,000	2,175,000	2,030,000	1,732,000	2,296,000	-	7,121,000	1,954,000	20,225,000	40,689,000
TYPEWRITERS	441,000	304,000	410,000	312,000	413,000	-	725,000	215,000	2,180,000	5,000,000
WORD PROCESSORS	49,800	18,100		18,100	10,400	34,300	0	12,500	194,000	350,000
GP COMPUTERS	9,164	5,416	1,980	6,900	4,200	-	1,860	2,820	27,360	59,700
SB COMPUTERS	12,258	7,046	2,936	2,055	2,349	2,422	7,560	2,716	34,058	73,400
DATA COMMUNICATION TERMINALS	71,900	49,600	16,500	57,500	35,000	-	15,500	23,500	230,500	500,000
TELEX/TWX TERMINALS	28,900	20,100	8,200	5,000	1,900	3,800	8,100	8,800	49,200	134,000
OTHER MESSAGE TERMINALS	43,200	30,000	12,200	7,500	2,800	5,600	12,200	13,100	73,400	200,000
FACSIMILE TERMINALS	51,800	24,300	9,100	6,100	0	0	0	15,200	83,500	190,000
COMMUNICATION WORD PROCESSORS	2,800	1,000	700	1,000	600	2,000	0	800	11,100	20,000
TOTAL	3,866,822	2,634,562	2,504,316	2,148,155	2,766,249	48,122	7,891,220	2,248,436	23,108,118	47,216,000

EXHIBIT V-4

BUSINESS COMMUNICATIONS VOLUME-UNITED STATES-MILLIONS OF MESSAGES ANNUALLY, 1978

INDUSTRY / TYPES OF EQUIPMENT	DISCRETE MANUFAC-TURING	PROCESS MANUFAC-TURING	TRANSPOR-TATION	BANKING AND FINANCE	INSURANCE	BUSINESS SERVICES	RETAIL	WHOLE-SALE	OTHER	TOTAL
TELEPHONES CALLS	10,900.0	7,600.0	6,600.0	5,700.0	7,600.0	–	23,500	6,400.0	66,600.0	134,900
PIECES OF FIRST CLASS MAIL	1,670.0	1,150.0	2,550.0	1,940.0	720.0	–	6,180	1,340.0	13,920.0	29,470
DATA COMMUNICATION MESSAGES	500.0	300.0	400.0	200.0	300.0	–	225	50.0	2,000.0	3,975
TELES/TWX MESSAGES	36.0	25.0	10.0	6.0	3.0	4.0	10	11.0	62.0	167
OTHER MESSAGE SYSTEM MESSAGES	107.0	74.0	31.0	19.0	7.0	14.0	31	33.0	184.0	500
MESSAGE SERVICES MESSAGES	15.0	11.0	4.0	2.0	1.0	2.0	4	4.0	24.0	67
FACSIMILE MESSAGES	97.0	46.0	17.0	12.0	0.0	0.0	0	29.0	155.0	356
COMMUNICATION WORD PROCESSOR MESSAGES	0.7	0.3	0.2	0.2	0.2	0.5	0	0.2	2.7	5
TOTAL MESSAGES*	13,326.0	9,206.0	9,612.0	7,879.0	8,631.0	21.5	29,950	7,867.0	82,948.0	169,440

*MAY NOT EQUAL TOTAL DUE TO ROUNDING

EXHIBIT V-5

BUSINESS COMMUNICATIONS GENERATING EQUIPMENT-UNITED STATES-UNITS INSTALLED PER 1000 EMPLOYEES, 1978

INDUSTRY / TYPES OF MESSAGES	DISCRETE MANUFACTURING	PROCESS MANUFACTURING	TRANSPORTATION	BANKING AND FINANCE	INSURANCE	BUSINESS SERVICES	RETAIL	WHOLESALE	OTHER	TOTAL
TELEPHONES	257.00	257.00	580.00	1,022.00	1,022.00	-	578.00	732.00	606.00	517.00
TYPEWRITERS	36.00	36.00	117.00	184.00	184.00	-	63.00	81.00	64.00	64.00
WORD PROCESSORS	4.10	2.10	3.60	10.70	4.60	16.80	0	5.10	5.80	4.50
GP COMPUTERS	0.70	0.70	0.57	4.10	1.87	-	0.15	1.06	0.83	0.76
SB COMPUTERS	0.99	0.83	1.19	1.21	1.05	1.78	0.61	1.02	1.02	0.93
DATA COMMUNICATION TERMINALS	5.90	5.90	5.50	33.90	15.60	-	1.26	8.90	6.90	6.40
TELEX/TWX TERMINALS	2,30	2.40	2.30	2.90	0.80	1.90	0.70	3.30	1.50	1.70
OTHER MESSAGE TERMINALS	3.50	3.50	3.50	4.40	1.20	2.70	1.00	4.90	2.20	2.50
FACSIMILE TERMINALS	4.20	2.90	2.60	3.60	0	0	0	5.70	2.50	2.40
COMMUNICATION WORD PROCESSORS	0.23	0.12	0.12	0.45	0.27	0.98	0	0.23	0.33	0.25
TOTAL *	315.00	311.00	716.00	1,267.00	1,231.00	-	645.00	843.00	691.00	601.00

*MAY NOT EQUAL TOTAL DUE TO ROUNDING

EXHIBIT V-6

BUSINESS COMMUNICATIONS VOLUME-UNITED STATES-MESSAGES SENT ANNUALLY PER EMPLOYEE, 1978

INDUSTRY TYPES OF EQUIPMENT	DISCRETE MANUFACTURING	PROCESS MANUFACTURING	TRANSPORTATION	BANKING AND FINANCE	INSURANCE	BUSINESS SERVICES	RETAIL	WHOLESALE	OTHER	TOTAL
TELEPHONES CALLS	888.00	888.00	1,876.00	3,363.00	3,384.00	-	1,906.00	2,397.00	1,995.00	1,716.00
PIECES OF FIRST CLASS MAIL	136.00	136.00	729.00	1,145.00	321.00	-	501.00	501.00	417.00	375.00
DATA COMMUNICATION MESSAGES	40.00	36.00	112.00	118.00	128.00	-	18.00	18.00	60.00	51.00
TELES/TWX MESSAGES	2.90	3.00	2.90	3.60	1.00	2.40	0.90	4.10	1.90	2.10
OTHER MESSAGE SYSTEM MESSAGES	8.80	8.80	8.80	11.01	3.00	6.75	2.50	12.30	5.50	6.40
MESSAGE SERVICES MESSAGES	1.15	1.20	1.15	1.49	0.42	0.92	0.33	1.65	0.69	0.85
FACSIMILE MESSAGES	7.90	5.40	4.90	6.80	0.00	0.00	0.00	10.70	4.70	4.50
COMMUNICATION WORD PROCESSOR MESSAGES	0.06	0.03	0.05	0.11	0.07	0.25	0.00	0.06	0.08	0.08
TOTAL MESSAGES	1,085.00	1,078.00	2,735.00	4,649.00	3,837.00	-	2,429.00	2,945.00	2,945.00	2,156.00

EXHIBIT V-7

BUSINESS COMMUNICATIONS GENERATING EQUIPMENT-CANADA- (BASED ON INPUT MODEL) UNITS INSTALLED, 1978

INDUSTRY TYPES OF MESSAGES	DISCRETE MANUFACTURING	PROCESS MANUFACTURING	TRANSPORTATION	BANKING AND FINANCE	INSURANCE	WHOLESALE	RETAIL	BUSINESS SERVICES	OTHER	TOTAL
TELEPHONES	220,000	209,000	389,000	365,000	-	-	763,000	-	2,387,000	4,333,000
TYPEWRITERS	32,000	29,000	79,000	66,000	-	-	81,000	-	252,000	539,000
WORD PROCESSORS	3,700	1,700	2,400	2,600	-	-	1,000	-	23,000	34,000
GP COMPUTERS	625	575	400	1,000	-	-	400	-	3,300	6,300
SB COMPUTERS	900	675	800	400	-	-	900	-	4,000	7,675
DATA COMMUNICATION TERMINALS	5,300	4,800	3,700	8,400	-	-	3,300	-	27,000	52,500
TELEX/TWX TERMINALS	2,100	2,000	1,500	600	-	-	1,400	-	5,900	13,500
OTHER MESSAGE TERMINALS	3,100	2,800	2,300	900	-	-	2,100	-	8,700	19,900
FACSIMILE TERMINALS	3,800	2,400	1,700	600	-	-	1,300	-	9,800	19,600
COMMUNICATION WORD PROCESSORS	200	100	100	150	-	-	75	-	1,300	1,925
TOTAL	271,725	253,050	480,900	445,650	-	-	854,475	-	2,722,000	5,027,800

*MAY NOT EQUAL TOTAL DUE TO ROUNDING

EXHIBIT V-8

BUSINESS COMMUNICATIONS VOLUME-CANADA-(BASED ON INPUT MODEL)
MILLIONS OF MESSAGES ANNUALLY, 1978

INDUSTRY / TYPES OF EQUIPMENT	DISCRETE MANUFAC-TURING	PROCESS MANUFAC-TURING	TRANSPOR-TATION	BANKING AND FINANCE	INSURANCE	BUSINESS SERVICES	RETAIL	WHOLE-SALE	OTHER	TOTAL
TELEPHONES CALLS	794.00	222.000	1,260.000	1,208.00	-	-	2,514.00	-	7,858.00	13,856.00
PIECES OF FIRST CLASS MAIL	122.00	111.000	489.000	242.00	-	-	632.00	-	1,643.00	3,239.00
DATA COMMUNICATION MESSAGES	36.00	29.000	75.000	45.00	-	-	23.00	-	236.00	444.00
TELES/TWX MESSAGES	2.60	2.400	2.000	0.80	-	-	1.80	-	7.50	17.10
OTHER MESSAGE SYSTEM MESSAGES	7.90	7.200	5.900	2.40	-	-	5.40	-	21.70	50.50
MESSAGE SERVICES MESSAGES	1.00	1.000	0.800	0.30	-	-	0.70	-	2.70	6.50
FACSIMILE MESSAGES	7.10	4.400	3.300	1.10	-	-	2.40	-	18.50	36.80
COMMUNICATION WORD PROCESSOR MESSAGES	0.05	0.025	0.025	0.02	-	-	0.02	-	0.32	0.46
TOTAL MESSAGES*	971.00	377.000	1,836.000	1,500.00	-	-	3,179.00	-	9,788.00	17,650.00

*MAY NOT EQUAL TOTAL DUE TO ROUNDING

EXHIBIT V-9

BUSINESS COMMUNICATIONS COMPONENTS - CANADA, 1978 (BASED ON INPUT MODEL) TYPES OF EQUIPMENT AND MESSAGES

• TYPES OF EQUIPMENT (IN THOUSANDS)	
- BUSINESS TELEPHONES	4,333.0
- OFFICE TYPEWRITERS	539.0
- WORD PROCESSORS	34.4
- GENERAL PURPOSE COMPUTERS	6.3
- SMALL BUSINESS COMPUTERS	7.7
- DATA TERMINALS WITH COMMUNICATIONS	52.5
- TELEX/TWX TERMINALS	13.5
- OTHER MESSAGE SYSTEM TERMINALS	19.9
- FACSIMILE TERMINALS	19.6
- COMMUNICATING WORD PROCESSORS	1.9
TOTAL	5,027.8*
• TYPES OF MESSAGES (IN MILLIONS ANNUALLY)	
- BUSINESS TELEPHONE CALLS	13,856.00
- PIECES OF FIRST CLASS MAIL	3,239.00
- PIECES OF COURIER MAIL	-
- DATA COMMUNICATION MESSAGES	444.00
- TELEX/TWX MESSAGES	17.10
- OTHER MESSAGE SYSTEM MESSAGES	50.50
- MESSAGE SERVICE MESSAGES	6.50
- FACSIMILE MESSAGES	36.80
- COMMUNICATING WORD PROCESSOR MESSAGES	0.46
TOTAL	17,650.00*

*MAY NOT EQUAL TOTAL DUE TO ROUNDING

- A listing of the data sources used in constructing the model may be reviewed in Appendix A.

C. ANALYSIS OF THE MODEL

- The resulting theoretical model of the Canadian business communications market was analyzed in a number of ways.

1. COMPARISON WITH SOURCE DATA

- First the data resulting from the model was compared with directly available data on the Canadian market in order to establish some comparative measures of the accuracy of the model and of the Canadian source data.
  - These data are shown in Exhibit V-10 in actual quantities and in V-11 expressed as a percent of the U.S. market.
  - Many of the items of available data on the Canadian market are of highly questionable accuracy. This is particularly true, for example, of the estimate of Canadian office typewriters. However, where the data are known to be accurate, the model either compares favorably or produces no surprises.
  - Accurate data is presumed for telephone equipment and usage, Telex/TWX equipment, and first class mail volumes.
  - Telephone equipment compares very closely with the model. Telephone usage appears slightly low.
  - Telex/TWX estimates from the model are quite low but U.S. Telex/TWX densities are known to be lower than Canada which is more in line with the rest of the industrialized world.

EXHIBIT V-10

MODEL OF CANADIAN BUSINESS COMMUNICATIONS, 1978-BASED ON UNITED STATES EQUIPMENT AND VOLUME PER EMPLOYEE

EQUIPMENT INSTALLED AND MESSAGES TRANSMITTED	UNITED STATES	CANADA (PER MODEL)	CANADA (PER SOURCES)
TOTAL COMMUNICATING ORIGINATING EQUIPMENT (THOUSANDS)*	47,216.0	5,028.00	6,260.0
TELEPHONES	40,689.0	4,333.00	4,140.0
TYPEWRITERS	5,000.0	539.00	2,000.0
WORD PROCESSORS	350.0	34.40	25.0
GENERAL PURPOSE COMPUTERS	59.7	6.30	6.8
SMALL BUSINESS COMPUTERS	73.4	7.70	-
DATA TERMINALS WITH COMMUNCATIONS	500.0	52.50	28.0
TELEX/TWX TERMINALS	134.0	13.50	41.0
OTHER MESSAGE SYSTEM TERMINALS	200.0	19.90	13.7
FACSIMILE TERMINALS	190.0	19.60	4.8
COMMUNICATING WORD PROCESSORS	20.0	1.93	1.0
TOTAL MESSAGES (MILLIONS PER YEAR)	169,440.0	17,650.00	13,991.0
BUSINESS TELEPHONE CALLS	134,900.0	13,856.00	11,620.0
PIECES OF FIRST CLASS MAIL	29,470.0	3,239.00	2,012.0
PIECES OF COURIER MAIL	-	-	-
DATA COMMUNICATION MESSAGES	3,975.0	444.00	244.0
TELEX/TWX MESSAGES	167.5	17.10	51.3
OTHER MESSAGE SYSTEM MESSAGES	500.0	50.50	34.3
MESSAGE SERVICE MESSAGES	67.0	6.50	12.0
FACSIMILE MESSAGES	356.3	36.80	17.0
COMMUNICATING WORD PROCESSOR MESSAGES	5.0	0.46	0.3

*ROUNDED

EXHIBIT V-11

CANADA/UNITED STATES RATIOS
(CANADA AS A PERCENT OF UNITED STATES)

EQUIPMENT INSTALLED AND MESSAGES TRANSMITTED	MODEL	SOURCE DATA
TOTAL COMMUNICATING ORIGINATING EQUIPMENT	10.7	13.25
TELEPHONES	10.7	10.17
TYPEWRITERS	10.8	40.0
WORD PROCESSORS	9.7	7.14
GENERAL PURPOSE COMPUTERS	10.6	11.39
SMALL BUSINESS COMPUTERS	10.5	-
DATA TERMINALS WITH COMMUNICATIONS	10.5	5.60
TELEX/TWX TERMINALS	10.1	30.60
OTHER MESSAGE SYSTEM TERMINALS	10.0	6.85
FACSIMILE TERMINALS	10.3	2.53
COMMUNICATING WORD PROCESSORS	9.5	5.00
TOTAL MESSAGES	10.4	8.26
BUSINESS TELEPHONE CALLS	10.3	8.61
PIECES OF FIRST CLASS MAIL	11.0	6.83
PIECES OF COURIER MAIL	-	-
DATA COMMUNICATION MESSAGES	11.2	6.14
TELEX/TWX MESSAGES	10.2	30.63
OTHER MESSAGE SYSTEM MESSAGES	10.1	6.86
MESSAGE SERVICE MESSAGES	9.7	17.91
FACSIMILE MESSAGES	10.3	4.77
COMMUNICATING WORD PROCESSOR MESSAGES	9.2	6.00

- First class mail is lower than as predicted by the model but this is likely to be the result of the high volume of commercial courier services in Canada. In the user survey, courier mail was estimated at about 25% of Canada Post. If this relationship holds this would add approximately 500 million messages per year.

2. ANALYSIS OF FUNCTIONAL GROUPING

- The second analysis performed consisted of grouping the data into categories of known functional interchangeability. For example, the category of administrative message terminals includes Telex/TWX, other message systems, facsimile, and communicating word processors, as shown in Exhibits V-12 and V-13.

  - Grouped in this way the model starts to point out some interesting relationships between the U.S. and Canada.

  - Telephone communications in Canada are almost identical to the U.S.

  - First class mail communications are lower in Canada than in the U.S. but this is probably because courier services, not accounted for in the model, are significantly higher in Canada than in the U.S.

  - Data communications are lower in Canada. This is probably due to a lag in the application of computer technology in general in Canada relative to the U.S.

  - Message communications in Canada are almost identical to the U.S., but as previously noted, the types of message communications are quite different. Telex installations and usage are much higher in Canada, whereas other message communications alternatives such as facsimile and other keyboard based systems are lower.

EXHIBIT V-12

BUSINESS COMMUNICATIONS CATEGORIES

TYPES OF EQUIPMENT (IN THOUSANDS)	U.S.	CANADA (PER INPUT MODEL)	CANADA (PER SOURCES)
TELEPHONES	40,689	4,333	4,140
TYPING STATIONS	5,350	573	2,025
COMPUTERS & DATA TERMINALS	633.1	66.5	34.8
ADMINISTRATION MESSAGE TERMINALS	544	54.9	60.5
TOTAL*	47,216	5,028	6,260
TYPES OF MESSAGES (IN MILLIONS ANNUALLY)	U.S.	CANADA (PER INPUT MODEL)	CANADA (PER SOURCES)
TELEPHONE CALLS	134,900	13,856	11,620
FIRST CLASS MAIL	29,470	3,239	2,012
DATA COMMUNICATION MESSAGES	3,975	444	244
ADMINISTRATION TELECOMMUNICATION MESSAGES	1,095.5	111.4	115
TOTAL*	169,441	17,650	13,991

* ROUNDED

EXHIBIT V-13

BUSINESS COMMUNICATIONS CATEGORIES - EXPRESSED AS A PERCENT OF U.S.

TYPES OF EQUIPMENT	U.S.	CANADA (PER INPUT MODEL)	CANADA (PER SOURCES)
TELEPHONES	100.0%	10.7%	10.2%
TYPING STATIONS	100.0	10.7	37.9
COMPUTERS AND DATA TERMINALS	100.0	10.5	5.5
ADMINISTRATIVE MESSAGE TERMINALS	100.0	10.1	11.1
AVERAGE	100.0%	10.7%	13.3%

TYPES OF MESSAGES	U.S.	CANADA (PER INPUT MODEL)	CANADA (PER SOURCES)
TELEPHONE CALLS	100.0%	10.3%	8.6%
FIRST CLASS MAIL	100.0	11.0	6.8
DATA COMMUNICATION MESSAGES	100.0	11.2	6.1
ADMINISTRATIVE TELECOMMUNICATION MESSAGES	100.0	10.1	10.5
AVERAGE	100.0%	10.4%	8.3%

3. GROWTH FORECASTING

- The third analysis performed is intended to establish a time relationship between the individual components of business communications in the U.S. and Canada. The purpose of this analysis is to establish a Canada growth forecast based on U.S. historical and projected growth in each component.

  - The first step in this analysis was to establish an average annual growth rate, 1978 through 1983, for the business communications components in the U. S. In some cases, such as telephones and mail, historic growth rates can be and were used. In other cases, particularly computers, word processors, facsimile, data communications, etc., the primary sources were published studies on the various topics. Since these published studies are often in conflict, the numbers used represent an INPUT established composite forecast, as shown in Exhibit V-14.

  - Next these growth rates were adjusted to apply to the Canadian market. There is a basic difference of about 1.5% in employment growth rates between the U.S. and Canada (U.S. = 1.75% AAGR, Canada = 3.25%). This base difference is confirmed by slightly higher growth rates in the large primary communications services in Canada. (Telephone = 6% in Canada, 5% in U.S.; 1st Class Mail = 4% in Canada, 2% in U.S.).

  - Given this basic difference at 1.5% and some higher growth rates in certain business sectors due to being in an earlier phase of the growth cycle, a set of growth rates for the Canadian business sectors was estimated as shown in Exhibit V-15.

  - Next a basing point for the Canadian forecast was established using a composite of the market estimate from the INPUT model and the market data as available from actual sources. Where there was either reasonable agreement between the model and the source, or there was solid evidence of the accuracy of the source data, the source data was

EXHIBIT V-14

GROWTH OF BUSINESS COMMUNICATION COMPONENTS
UNITED STATES, 1978 to 1983

TYPES OF EQUIPMENT (IN THOUSANDS)	1978	1983	AAGR 1983/1978 (PERCENT)
BUSINESS TELEPHONES	40,689.0	52,000.0	5.0%
OFFICE TYPEWRITERS	5,000.0	5,000.0	0
WORD PROCESSORS	350.0	900.0	21.0
GENERAL PURPOSE COMPUTERS	59.7	69.0	3.0
SMALL BUSINESS COMPUTERS	73.4	310.0	33.0
DATA TERMINALS WITH COMMUNICATIONS	500.0	1,250.0	20.0
TELEX/TWX TERMINALS	134.0	160.0	3.6
OTHER MESSAGE SYSTEM TERMINALS	200.0	250.0	5.0
FACSIMILE TERMINALS	190.0	350.0	13.0
COMMUNICATING WORD PROCESSORS	20.0	210.0	60.0
TOTAL *	47,216.0	60,500.0	5.1%

TYPES OF MESSAGES (IN MILLIONS ANNUALLY)	1978	1983	AAGR 1983/1978 (PERCENT)
BUSINESS TELEPHONE CALLS	134,900.0	172,000.0	5.0%
PIECES OF FIRST CLASS MAIL	29,470.0	32,600.0	2.0
PIECES OF COURIER MAIL	-	-	-
DATA COMMUNICATION MESSAGES	3,975.0	8,000.0	15.0
TELEX/TWX MESSAGES	167.5	195.0	3.0
OTHER MESSAGE SYSTEM MESSAGES	500.0	600.0	4.0
MESSAGE SERVICE MESSAGES	67.0	52.0	-5.0
FACSIMILE MESSAGES	356.0	700.0	15.0
COMMUNICATING WORD PROCESSOR MESSAGES	5.0	1,500.0	80.0
TOTAL*	169,441.0	215,647.0	4.9%

*ROUNDED

EXHIBIT V-15

COMPARISON OF UNITED STATES AND CANADIAN GROWTH RATES, 1978 TO 1983 - AVERAGE ANNUAL GROWTH RATE

TYPES OF EQUIPMENT	UNITED STATES	CANADA
BUSINESS TELEPHONES	5.0%	6.0%
OFFICE TYPEWRITERS	0.0	0.0
WORD PROCESSORS	21.0	21.0
GENERAL PURPOSE COMPUTERS	3.0	10.0
SMALL BUSINESS COMPUTERS	33.0	50.0
DATA TERMINALS WITH COMMUNICATIONS	20.0	25.0
TELEX/TWX TERMINALS	3.6	6.0
OTHER MESSAGE SYSTEM TERMINALS	5.0	5.0
FACSIMILE TERMINALS	13.0	20.0
COMMUNICATING WORD PROCESSORS	60.0	60.0
AVERAGE	5.1%	5.8%
TYPES OF MESSAGES	**UNITED STATES**	**CANADA**
BUSINESS TELEPHONE CALLS	5.0%	6.0%
PIECES OF FIRST CLASS MAIL	2.0	4.0
PIECES OF COURIER MAIL	-	-
DATA COMMUNICATION MESSAGES	15.0	25.0
TELEX/TWX MESSAGES	3.0	7.0
OTHER MESSAGE SYSTEM MESSAGES	4.0	5.0
MESSAGE SERVICE MESSAGES	-5.0	0.0
FACSIMILE MESSAGES	15.0	18.0
COMMUNICATING WORD PROCESSOR MESSAGES	80.0	80.0
AVERAGE	4.9%	6.4%

used. Where there was disagreement or no source data the model was used. The basing point for 1978 is shown in Exhibit V-16.

- Finally, using that basing point for the 1978 market position and the estimated growth rates for the Canadian market from Exhibit V-15, a composite forecast was prepared as shown in the last column of Exhibit V-16.

EXHIBIT V-16

MODEL OF CANADIAN BUSINESS COMMUNICATIONS, 1978 TO 1983 - BASED ON INPUT MODEL WITH ADJUSTMENTS

TYPES OF EQUIPMENT	1978	1983
BUSINESS TELEPHONES	4,140.0A	5,540.0
OFFICE TYPEWRITERS	540.0B	540.0
WORD PROCESSORS	23.0A	60.0
GENERAL PURPOSE COMPUTERS	6.0A	10.0
SMALL BUSINESS COMPUTERS	1.0C	8.0
DATA TERMINALS WITH COMMUNICATIONS	28.0A	118.0
TELEX/TWX TERMINALS	41.0A	54.0
OTHER MESSAGE SYSTEM TERMINALS	14.0A	17.0
FACSIMILE TERMINALS	10.0C	25.0
COMMUNICATING WORD PROCESSORS	1.0A	10.0
TOTAL	4,804.0	6,382.0
TYPES OF MESSAGES		
BUSINESS TELEPHONE CALLS	13,500.0C	18,066.0
PIECES OF FIRST CLASS MAIL	2,012.0A	2,448.0
PIECES OF COURIER MAIL	500.0A	1,000.0
DATA COMMUNICATION MESSAGES	244.0A	745.0
TELEX/TWX MESSAGES	51.0A	71.0
OTHER MESSAGE SYSTEM MESSAGES	34.0A	43.0
MESSAGE SERVICE MESSAGES	12.0A	12.0
FACSIMILE MESSAGES	15.0A	34.0
COMMUNICATING WORD PROCESSOR MESSAGES	0.3A	2.5
TOTAL	16,368.0	22,421.5

A - ESTIMATE BASED ON ACTUAL SOURCE DATA
B - ESTIMATE BASED ON MODEL DATA
C - ESTIMATE BASED ON ACTUAL/MODEL COMPROMISE

APPENDIX A: SOURCES USED

APPENDIX A: SOURCES USED

1971 Census of Canada, Statistics Canada

1974 Data Communications Survey, Information Canada

Canada Yearbook, Statistics Canada, 1977

Canadian Statistical Review, Statistics Canada, October 1978

Employment, Earnings, and Hours, Statistics Canada, October 1978

Telecommunications Statistics, Statistics Canada, 1976

Telephone Statistics, Statistics Canada, 1977

Computers and Communications in the Canadian Business Community, Information Canada, 1974

Tariff Board Study on Computers and Peripheral Equipment, Canadian Tariff Board, 1975

Considerations Which Affect The Choice of Organization Structure For The Canadian Post Office, August 1978

Problems Relating To The Interconnection of Terminal Devices With Communications Carrier Provided Telecommunications, Department of Communications, 1971.

Telecommunications Carriers Market Projection and Analysis, Department of Communications, 1970.

Annual Report of the CRTC, 1978

Report of the Superintendent of Insurance For Canada, 1977

The Financial Post 300, McClean Hunter, 1978

Survey of Industrials, McClean Hunter, 1978

Frasers Industrial Trade Directory, McClean Hunter, 1978

Report of the Commission on Postal Service, U.S. Postal Service, April 1977

Statistical Abstract of the U.S., U.S. Department of Commerce, 1978

Telex in der Welt, Siemens, A.G., August 1975

I.T.U. Telecommunications Journal, March, 1977

Value Added Network Services, INPUT 1978

Small Establishment Service Annual Report, INPUT, 1978

APPENDIX B: INTERVIEW PROGRAM

APPENDIX B

INTERVIEW PROGRAM

INDUSTRY SECTOR / ESTABLISHMENT SIZE	DISCRETE MANUFACTURING		PROCESS MANUFACTURING		TRANSPORTATION		BANKING AND FINANCE		INSURANCE		WHOLESALE		RETAIL		BUSINESS SERVICES		TOTAL		GRAND TOTAL
	HQ	IND	HQ	IND	HQ	IND	HQ	IND	HQ	IND	HQ	IND	HQ	IND	HQ	IND	HQ	IND	
1 TO 19 EMPLOYEES																			
TOTAL	4	2	0	4	2	7	0	3	3	7	1	10	1	9	2	9	13	51	64
ON-SITE	3	0	–	0	1	0	–	0	1	0	1	0	0	0	0	1	6	1	7
TELEPHONE	1	2	–	4	1	7	–	3	2	7	0	10	1	9	2	8	7	50	57
20 TO 99 EMPLOYEES																			
TOTAL	5	5	3	6	3	8	2	17	3	5	3	9	5	5	6	4	30	59	89
ON-SITE	1	1	0	1	0	0	0	1	0	1	0	0	2	0	1	0	4	4	8
TELEPHONE	4	4	3	5	3	8	2	16	3	4	3	9	3	5	5	4	26	55	81
100 + EMPLOYEES																			
TOTAL	10	10	18	5	13	4	18	4	10	4	7	5	13	0	12	8	101	40	141
ON-SITE	5	0	9	0	1	0	8	0	3	1	0	0	3	0	4	0	33	1	34
TELEPHONE	5	10	9	5	12	4	10	4	7	3	7	5	10	0	8	8	68	39	107
? EMPLOYEES																			
TOTAL	3	1	6	0	3	1	3	1	0	1	0	0	2	1	2	2	19	7	26
ON-SITE	1	0	6	–	2	0	3	0	–	0	–	–	1	0	1	1	14	1	15
TELEPHONE	2	1	0	–	1	1	0	1	–	1	–	–	1	1	1	1	5	6	11
TOTAL EMPLOYEES																			
TOTAL	22	18	27	15	21	20	23	25	16	17	11	24	21	15	22	23	163	157	320
ON-SITE	10	1	15	1	4	0	11	1	4	2	1	0	6	0	6	2	57	7	64
TELEPHONE	12	17	12	14	17	20	12	24	12	15	10	24	15	15	16	21	106	150	256

APPENDIX C: DEFINITIONS

APPENDIX C: DEFINITIONS

- An enterprise is a business organization.
- An establishment is a physical location or a street address and can be:
  - An independent enterprise.
  - A branch of a major enterprise.
- An establishment can be a single-unit enterprise (SUE) or part of a multi-unit enterprise (MUE):
  - A single unit enterprise is an establishment having all operations consisting of activities not distinctly separable.
  - A multi-unit enterprise is a business organization consisting of more than one establishment or an establishment having distinctly separable activities.
- A headquarters location is the administrative office of an enterprise which fits one or more of the following criteria:
  - A financial post 300 firm.
  - A multi-unit enterprise with more than 1,500 employees.

- A multi-unit enterprise with more than $50 million sales.

- An independent establishment is an SUE or MUE whose employment is 500 employees or less, and which is not a branch as defined above.

- Text Editor - A typing workstation with sufficient internal memory to store at least one complete page and enough internal logic to perform word editing.

- Text Editor Vendor - A manufacturer of text editors with sales and service operations but not necessarily manufacturing operations in Canada.

- Business Communications - All means of communicating information to or from business establishments except face to face. This includes voice telephone, mail, courier, data communications, and message telecommunications.

- Teletex (as described to respondents during the survey) - There is a communications service concept being developed, primarily in Europe, called Teletex. Teletex is a medium speed switched network service intended to allow communicating word processors to transmit messages to each other. It will also be able to communicate directly with the worldwide network of Telex terminals.

- Message - The definition depends on the context. A message usually relates to a unit of information being transmitted. Message telecommunications relates to the classical set of paper output, electronic transmitted traffic between people-operated devices.

INDUSTRY DEFINITIONS (U.S. SIC CODES)

- DISCRETE MANUFACTURING (SIC 23, 25, 27, 31, 34, 35, 36, 37, 38, 39)
  - Involves fabrication and assembly of products measurable in units such as gears, shoes, or automobiles).

- PROCESS MANUFACTURING (SIC 20, 21, 22, 24, 26, 28, 30, 32, 33)
  - Involves continuous operations that ultimately yield products measurable in volumes such as gasoline, cloth, or chemicals.

- TRANSPORTATION (SIC 41, 42, 44, 45, 46, 47)
  - Includes the transportation of people or goods and the warehousing of goods.

- BANKING AND FINANCE (SIC 60, 61, 62, 67)
  - Includes banks and trust companies, credit agencies, security brokers, and other investment companies.

- INSURANCE (SIC 63, 64)
  - Includes insurance carriers, brokers, and agencies.

- WHOLESALING (SIC 50, 51)
  - Includes the selling of goods to retailers and to other businesses.

- RETAILING (SIC 52, 53, 54, 55, 56, 57, 58)
  - Includes the selling of goods to consumers.

- BUSINESS SERVICES (SIC 73, 81)
  - Includes legal, accounting, engineering, data processing, and other business services.

- OTHER (SIC 70, 79, 84)
  - Includes hotels, parks, museums, and other non-personal services.

APPENDIX D: QUESTIONNAIRES

SECTION I: COMPANY DATA

1. Is this location corporate headquarters?

2. Number of other locations in Canada?

Major ________ Small Branches ________

Agents, stores, etc. ________ Total ________

3. Is an annual report available?

Line of Business

Annual Revenue

Growth Expectations

4. Number of employees

Total Company ________ This Location ________

Clerical ________ Typists ________

SECTION II DOCUMENT PREPARATION

1. Word processing equipment?

2. Why/why not?

3. Installed document preparation equipment?

Number of typewriters ________

Number of word processors ________ Make ____________________

Other document preparation equipment

4. Word processors in 1983?

5. Primary word processing applications?

6. Any communications on word processing now?

7. Any communications on word processing in 1983?

8. Factors influencing future of word processing?

9. Factors preventing word processing?

10. Most important features of word processing equipment?

11. How is the decision to buy word processors established?

SECTION III: MAIL OPERATIONS

1. How much mail is sent from this location?

Pieces

Bags ________ Per ________

$

Other

2. To whom?

Other plants/branches

Other companies

Households

3. What are the largest volume applications?

4. Are many of these documents prepared by a computer?

5. Are many of these documents prepared by printshop/reproduction?

6. What is the average length of these documents?

7. How is this mail sent?

Canada Post

Courier Service

Company Vehicle

8. If not Canada Post, why not?

9. How much mail is received at this location?

Pieces

Bags ________ Per ________

Other

10. From whom?

Other Plants/Branches

Other Companies

Households

11. Largest volume applications?

12. How much mail stays within this building?

Pieces

% of Outgoing Mail

13. How many special documents (size, graphics, etc.) are handled?

14. What documents are key to your firms operation?

15. Where are these key documents prepared?

16. What sort of urgency attaches to these key documents?

17. How are they transmitted?

18. What sort of premium do you pay to handle them?

19. Are you satisfied with the way they are now handled?

20. Could they be handled by electronic transmission?

IV. CORPORATE TELECOMMUNICATIONS NETWORK

A. TELEPHONE NETWORK

1. Much voice traffic between here and remote locations?

2. Primary applications?

3. Network(s) used?

Direct Dial	$	________
WATS	# Lines	________
Private Line	# Lines	________
Other		

4. Satisfied?

5. Telephone system here.

Centrex

PABX # Lines ________

Other

6. Telephone Traffic volume here.

Incoming ________

Outgoing ________ Calls per ________

Intra Office ________

7. Primary Applications

8. Any changes foreseeable in telephone system?

9. Any improvements you would like to see?

B. MESSAGE TELECOMMUNICATIONS NETWORK

1. Much message traffic between here and remote locations?

2. Primary applications?

3. Network(s) used?

TLX # Stations __________

Telenet # Stations __________

MSDS # Stations __________

Private Network # Stations __________

Other # Stations __________

4. Is this network connected to a computer?

Where?

5. Any changes anticipated?

6. Much message traffic to/from other companies?

7. Primary applications?

8. Network(s) used?

9. Much message traffice to/from other countries?

10. Primary applications?

11. Network(s) used?

12. What improvements would you like to see in msg. networks?

13. Any facsimile equipment?

Mfr. ______________________ # Units ______________

14. Primary applications?

15. Future plans for Fax?

C. COMMUNICATIONS MANAGEMENT

1. How is the management of communications services organized?

2. How are communication needs or requirements established?

3. How are communication solutions selected?

4. Will communicating WP solutions be handled the same way?

5. Who is involved in the buying decisions on communications?

SECTION V: DP SYSTEM

1. What type of DP system?

2. Remote terminals?

Manufacturer ____________________ # Terminals ____________

3. What communication network connects these terminals?

4. Primary applications on terminals?

5. Any changes anticipated?

6. Is this DP system now performing any office automation functions such as

text editing ______________

message switching ______________

7. Will it?

5. How important are the following features of a communications service?

A. Connection to existing message terminals (i.e. TELEX)?

B. Message or call accounting reports.

C. Compatability with existing computer and data terminal protocols.

D. Terminals provided as part of the service.

E. Value added features (i.e. multiple address, store and forward).

SECTION VI: TELETEX

There is a new communications service concept for which international standards are being developed. It is called Teletex. It is a medium speed switched network service intended to allow communicating word processors to transmit messages to each other. It will also be compatible with Telex.

1. Does this sound like a service which could be useful to your company?

2. Why/why not?

3. What would you use it for?

4. How much would you be willing to pay for such a service?

F. Multiple device compatibility (speeds, copes, etc.).

G. Conversational connection between terminals.

H. Message storage within the network.

- Storage of address lists.
- Message storage for legal record purposes.
- Electronic mailbox.

CATALOG NO. YT

CONFIDENTIAL OFFICE REQUIREMENTS SURVEY

Hello, my name is ______________. I am with INPUT. We are an international management consulting firm located in California. We have been retained by a Canadian client to assist them in determining how they can better serve the Canadian office environment. Their primary concern is understanding the users' requirements for handling documents and other information within your office and between your office and other locations.

I. First of all I would like to obtain some general information about your company.

1. Please describe your company's primary line of business? (Interviewer note: do not prompt with industry name, check appropriate box)

   ( ) Discrete Mfg.
   ( ) Process Mfg.
   ( ) Wholesale
   ( ) Transportation
   ( ) Banking
   ( ) Business Services
   ( ) Insurance
   ( ) Retail

   ____

   ____

2. Is your location the headquarters of your company? ( ) Yes (

3. How many other establishments does your company operate in Canada? __________

4. How many employees are there at your location? __________

5. How many of these employees operate typewriters or other keyboard devices? __________ (specify number or percent)

II. Next I have some questions about the ways which you prepare documents at your location.

6. Do you use word processing equipment? (No - skip to Q15)

   ( ) Yes

7. What kind of word processing equipment? How many units are installed?

Manufacturer Name	Model #	# of Units

8. Do you own or rent this equipment? (If leased, how long?) Is there a purchase option at the end of the lease?

( ) Own (purchase)
( ) Rent
( ) Lease Length of lease ____________

( ) Purchase option at end of lease

9. What are the 3 major applications for which these word processors are used? (in order or importance)

1. ______________________________

2. ______________________________

3. ______________________________

10. What are the 3 primary factors influencing the future of word processing in your company? (in order of importance)

1. ______________________________

2. ______________________________

3. ______________________________

11. How many word processing units would you estimate will be installed by 1983?

12. Are any of these units equipped and used for telecommunications?

No - Skip to Q14

( ) Yes

13. What are these communications units used for?

Skip to Q17

14. Will the word processing units be equipped for telecommunications by 1983?

( ) Yes
( ) No

Skip to Q17

15. [If respondent does not use word processing equipment]. what are the primary reasons preventing you from using word processing equipment?

16. Do you think that your company will be using word processing by 1983?

Now I have a few questions on your mail traffic.

17. What type of documents or applications account for the largest proportion of your outgoing mail? (Interviewer-If respondent does not respond, or does not understand then give examples: Customer invoices, billing, correspondence, advertising)

18. What percentage of your mail is sent to:

Other locations within your company	______%
To other companies	______%
To households	______%
Total	100 %

19. Do you use delivery services other than Canada Post?
( ) Yes ( ) No

20. Why?

21. What proporation of your total mail is handled by these other services? (quantity and describe type)

_______________%

22. Are there some documents which you could characterize as being key to the operations of your company? That is, are there any without which, you couldn't operate... or that have urgency, or major business importance?

( ) Yes ( ) No

What are these?

23. We are interested in measuring time elapsed between the time a key document leaves the originator until it reaches the intended party. What is the maximum allowable elapsed time?

____

(Interviewer, please record any comments.

24. Are these key documents sent or received at your location?

( ) Sent ( ) Received

25. How are these key documents transmitted? (Interviewer, do not prompt resonses)

( ) Facsimile
( ) Telex
( ) TWX
( ) Private Message Network

( ) Data Communications termina
( ) Other Message Telecommunications services
____________________specify
( ) Other
____________________specify

26. Could these documents be transmitted electronically?

( ) Yes ( ) No

III. Next I would like to ask some questions about your company's message telecommunications network.

27. Which of the following communications services does your company use? Entire Canadian Organization

	Yes/No	# of Terminals
TELEX		
TWX		
Other message telecommunications services (e.g. Telenet, MSDS,)		
Which ones		
Private message network		
Facsimile		
Data Communication Terminals		
Other		

28. How many terminals are there on each of these services? ↑

29. Please describe/define the primary applications on these services?

30. Do you see any changes in your use of these services by 1983? What are these changes? ( ) Yes ( ) No

31. What improvements would you like to see in these services? (in order of importance)

1. ____________________
2. ____________________
3. ____________________

32. How are the needs for such services established in your company? (who is involved, what process takes place?)

33. How are the solutions to these needs selected? (What takes place in the evaluation/selection of equipment or services?)

34. Would you expect that the communications needs associated with word processors will be handled in the same way?

35. What kind of a computer system or service is used at this location?

36. Does this computer system perform any word processing functions? If yes, describe. ( ) Yes ( ) No

37. Does it do any switching of messages between locations? ( ) Yes ( ) No

IV. There is a communications service concept being developed, primarily in Europe, called TELETEX. TELETEX is a medium speed switched network service intended to allow communicating word processors to transmit messages to each other. It will also be able to communicate directly with the worldwide network of TELEX terminals.

38. Does this sound like a service which could be useful to your company?
( ) Yes ( ) No

39. Why/why not?

40. What do you see as the best uses for this service?

I am going to read a number of possible features of such a service. Would you tell me your opinion of the importance of each of these features in terms of very important, somewhat important, unimportant, or undesirable.

		Very Important	Somewhat Important	Unimportant	Undesirable
41.	Connection to existing message services e.g. TELEX	☐	☐	☐	☐
42.	Conversational connection between terminals	☐	☐	☐	☐
43.	Compatibility with computer communication protocols	☐	☐	☐	☐
44.	Terminals provided as an integral part of the services	☐	☐	☐	☐
45.	Multiple address capability	☐	☐	☐	☐
46.	Pre-stored address lists	☐	☐	☐	☐
47.	Message composition and editing in the network	☐	☐	☐	☐
48.	Pre-stored message texts or paragraphs	☐	☐	☐	☐
49.	Confirmation of delivery	☐	☐	☐	☐
50.	Office typewriter quality output printing	☐	☐	☐	☐
51.	Message or call accounting reports	☐	☐	☐	☐

52. Of the above listed features which one is the most important to you?

53. How much more would you be willing to pay for this most wanted feature, as a percent of communications cost?

__________________%

( ) Would pay more, but don't know how much

( ) Wouldn't pay more

( ) Other ____
Specify

Thank you very much for your time. We will be sending you a summary of the survey results by the first of September.

Thank you,

Good-bye

VENDOR QUESTIONNAIRE

WORD PROCESSING MANUFACTURERS

1) What is your estimate of the total size of the word processing market in Canada?

2) How fast do you believe that it is growing?

3) Which are the dominant user industries?

4) Is market penetration of word processors related to the size of user establishments?

5) What portion of the Canadian market does your company represent?

6) When did your company start marketing in Canada?

7) Do your customers evidence a strong interest in communications for word processors?

8) Will they in the future?

9) What are the customer needs or applications which require communicating word processors?

10) Do your customers need connections to telex, TWX, packet networks, mailbox services, computers, and other.

11) Have you observed any relationship between word processors and facsimile?

12) How many of your sales are multi-station?

13) How many of your sales are multi-location?

14) Have you felt any competition from computer based text editing systems?

15) Have you felt any competition from computer based text editing services?